Thesis

VET in EUROPE

Monitoring Erasmus+

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To my wife Encarnita,

to our children Diego, Susana and Alejandro.

To my parents Audrey and Ricardo

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1. Introduction

Why

I am writing this introduction on the 25th of June 2016. Just two days after the British citizens have voted in favour of leaving the European Union - EU, the so-called “Brexit”.

I can never forget a sentence from my history teacher, Herr Kretschmar, that stated that throughout the history of Europe there has always been a conflict every 50 years, the time needed for the next generation to forget the horror of war.

After World War II - WWII, the countries in Europe started to work together to make war between France and Germany “not merely unthinkable, but materially impossible” (Schuman, 1950). The Schuman Declaration, 9 May 1950, warned “World peace cannot be safeguarded without the making of creative efforts proportionate to the dangers which threaten it.”

The Treaty of Rome that established the European Economic Community - EEC (EEC, 1957) "determined to lay the foundations of an ever closer union among the peoples of Europe, [..], affirming as the essential objective of their efforts the constant improvements of the living and working conditions of their people”.

In the case of the “Brexit”, my history teacher did not actually get the point: It was the older people that voted the UK out of the EU, the young British citizens massively wanted to stay. The British people who grew up with the consequences of World War II and lived in the EEC/EU since 1973 feel the benefits of staying are fewer than the disadvantages.

In 2005, eleven years ago, the French and Dutch citizens did not ratify the Treaty for a European Constitution. This milestone was a signal stating that the European population was not identifying and approving the objectives coming from the EU administration.

Instead of analysing the situation and asking the European people about what should be improved, the EU member governments decided to include in the Treaty of Lisbon elements of the unapproved Constitution and these came into force on 1 December 2009.

Nearly sixty years ago, the Treaty of Rome urged to work together to manage “constant improvements of the living and working conditions of their people”. Having regard to the Treaty of Rome establishing the European Economic Community, and in particular Article 128, the Council decided on 2 April 1963 (63/266) to lay down the “general principles for implementing a common vocational training policy” (COUNCIL OF THE EUROPEAN ECONOMIC COMMUNITY, 1963).

More than half a century later, Europe still does not have a common vocational training policy.

This means that the European Union has not done enough to foster a common vocational training policy and, as a consequence, the citizens are not able to benefit from it. In a period of economic crisis, the population needs work and work comes as a result of a proper education and training. A reason for the "Brexit" could be that the EU has not produced enough benefits that actually improve the lives of the British Europeans.

The present research describes and analyses not only the intial vocational education and training, iVET, in key countries in Europe, but also the environment and frameworks that interconnect iVET with other countries and their education structures, society and the global market.

The Erasmus+ program is an example of a specific EU action that is having a direct positive effect on iVET students, European citizens. This study includes a detailed investigation on how these funds are being distributed and reveals a set of best practices that can be used to foster not only a common European VET, but also the whole common European education policy.

I have a personal reason to engage my efforts in the present research. More than ten years ago I started to establish international relations between vocational education and training institutions across Europe. On my way, I discovered that the different stakeholders and partners I contacted have limited information about how VET is being developed across Europe. These limitations complicate the establishment of relations and the creation of transnational VET projects. I needed to investigate and create the present document to summarise the situation in the key European VET countries.

Managing to improve VET in the different countries will increase the employability of their citizens and, thus, their wealth. A long way has already been run, but the finish line is still far away.

The present work is my small contribution to the wonderful task of building a European Union.

2. Methodological Framework

How, What, Where and When

Mathematical tools for monitoring Erasmus+

2.1 How: Comparative Education Research

The current research uses the methodology proposed in Comparative Education. There are different definitions of Comparative Education.

Bereday defines it as follows:

> *Comparative education seeks to make sense out of the similarities and differences among educational systems. It catalogues educational methods across national frontiers; and in this catalogue each country appears as one variant of the total store of mankind´s educational experience* (Bereday, 1964).

Noah and Eckstein defend that:

> *Comparative Education is potentially more than a collection of data and perspectives from social science applied to education in different countries. Neither the topic of education nor the cross-national dimension is central to any of the social sciences; nor are the social science concerns and the crossnational dimension central to the works of educators. The field of comparative education is best defined as an intersection of the social sciences, education and cross-national study* (Noah & Eckstein, 1969).

Also according to Noah and Eckstein Comparative Education has four objectives:

> • *To describe educational systems, processes, or outcomes.*
>
> • *To assist in the development of educational institutions and practices.*
>
> • *To highlight the relationships between education and society.*
>
> • *To establish generalized statements about education valid in more than one country* (Noah & Eckstein, 1993).

To be able to define "Comparative Education in terms of science, systematic and coherent knowledge", translated by the author from the original version in Spanish (García Garrido, 1996, p. 91), it is necessary to take a first step to determine three fundamental elements: Subject, method and purpose (Caballero, Manso, Matarranz, & Valle, 2016).

FIGURE 1 COMPARATIVE EDUCATION IN TERMS OF SCIENCE

Comparative Education in terms of science		
What does it study?	How does it approach knowledge?	Why?
⇩	⇩	⇩
Subject	Method	Purpose
Education. Formal education systems: Regional/Intranational, National, International, and Supranational	Comparative method. Searches similarities and differences to find trends.	Reform-planning. Improvement. Political change.

Source: Translated by the author from the original version in Spanish (Caballero, Manso, Matarranz, & Valle, 2016).

In the case of the current research, the subject of study is the initial Vocational Education and Training in Europe and its Erasmus+ mobility programme (see 2.2 What: iVET in Europe and its Erasmus+ mobility programmes).

The purpose of comparing to find similarities and differences in the different European regions and countries is to detect good practices that can improve iVET and Erasmus+.

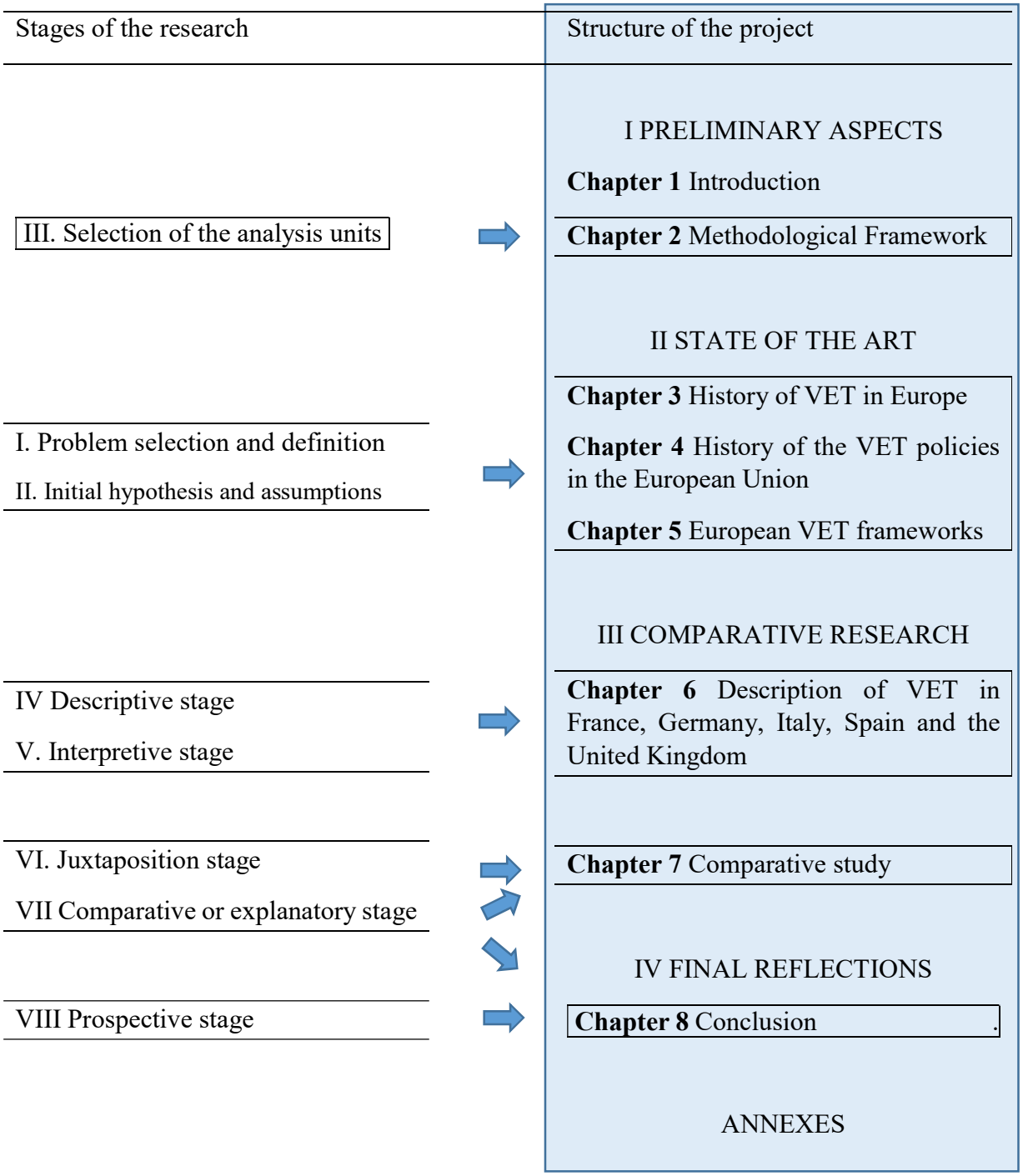
The article "Comparative Education Research: A way for new researchers" describes the following structure of the comparative method:

- *Definition of the methodological design*
    - *I. Problem selection and definition*
    - *II. Initial hypothesis and assumptions*
    - *III. Selection of the analysis units*
        - *Where? Comparative scope. Countries*
        - *When? Period*
        - *What? Selection of the comparison units.*
            - *Category/Dimension, Parameter, Indicator*
- *Research development*
    - *IV Descriptive stage*
    - *V. Interpretive stage*
    - *VI. Juxtaposition stage*
    - *VII Comparative or explanatory stage*
    - *VIII Prospective stage*

translated by the author from the original version in Spanish (Caballero, Manso, Matarranz, & Valle, 2016, p. 48).

Taking into account this structure the research has been developed following the scheme described in the next Figure.

FIGURE 2 RELATION OF THE STAGES OF THE RESEARCH WITH THE STRUCTURE OF THE PROJECT



Source: Created by the author with information about the stages of research from (Caballero, Manso, Matarranz, & Valle, 2016).

The sources used in this research follow the recommendations outlined by (Caballero, Manso, Matarranz, & Valle, 2016, p. 46) and are, as translated by the author:

- *In-depth. They have to fully cover and exhaust the study subject.*
- *Relevant. They have to correspond with the study subject.*
- *Updated. Published recently.*
- *In a variety of languages.*

The primary sources used in this research include European and national legislations. The secondary sources include, among others, the updated databases from the World Bank, Eurydice and relevant publications like the documents created by the European Centre for the Development of Vocational Training - Cedefop.

As the author is proficient in French, German, Spanish and English the documents in these languages were processed directly by the researcher.

In the case of documents in Italian, the researcher received assistance from his Italian colleagues Federico Curci and Daria Mottareale.

The present document has been created following the recommendations of the 6th edition of the American Psychological Association – APA style guide. The in-text citations and reference pages meet the mentioned standard.

2.2 What: iVET in Europe and its Erasmus+ mobility programmes

Early school leaving, unemployment in general, and youth unemployment in particular are common problems throughout Europe.

For a citizen to get and maintain a job he/she has to provide a professional qualification attainable through a proper education and training.

In the case of the present research, the focus is set on students of between 15 and 19 years old attending upper secondary vocational education and training. Each of the studied countries has different initial Vocational Education and Training - iVET courses at this study level that are offered in combination or as an alternative to upper secondary general education.

The Eramus+ programme intends to improve education, as a general objective, and has also the specific aim of reducing youth unemployment.

To choose the countries, part of this study and the results of the previous mobility programme, "Leonardo", were taken into account:

> Germany, the United Kingdom and Spain were the top three destination countries for individuals taking a Leonardo training programme in 2007-2011, attracting between them 45 % of all participants. Most participants came from Germany, France and Italy. (EUROPEAN COMMISSION, 2012, p. 10).

France, Germany, Italy, Spain and the United Kingdom contain more than half of all the VET students in the European Union - EU, 54% in 2012, (THE WORLD BANK, 2016).

The present research describes the situation of initial vocational education and training in France, Germany, Italy, Spain and the United Kingdom and analyses how are Erasmus+ funds being distributed to foster mobilities in VET.

TABLE 1 RESEARCH QUESTIONS AND OBJECTIVES

Research questions	General objectives	Specific objectives
How is the vocational education and training in the countries with the most Erasmus+ mobilities?	1. To learn how is the vocational education and training in France, Germany, Italy, Spain and the United Kingdom.	1.a) To learn and describe, with the greatest possible amount of indicators, the general context of education in France, Germany, Italy, Spain and the United Kingdom. 1.b) To learn and describe, with the greatest possible amount of indicators, the vocational education and training in France, Germany, Italy, Spain and the United Kingdom. 1.c) To learn and describe, with the greatest possible amount of indicators, the Erasmus+ VET mobilities funding procedures in France, Germany, Italy, Spain and the United Kingdom.
Which are the similarities, differences and trends in vocational education and training in France, Germany, Italy, Spain and the United Kingdom? How are the Erasmus+ VET mobilities being funded in these countries?	2. To produce a comparative education research of the vocational education and training in France, Germany, Italy, Spain and the United Kingdom.	2.a) To establish a complete list of comparison categories (dimensions, parameters and indicators) related to VET *(tertium comparationis*) valid to compare France, Germany, Italy, Spain and the United Kingdom. 2.b) To apply the comparison categories to France, Germany, Italy, Spain and the United Kingdom. 2.c) To determine similarities, differences and trends in VET in France, Germany, Italy, Spain and the United Kingdom. 2.d) To determine similarities, differences and trends in the Erasmus+ VET funding procedures in France, Germany, Italy, Spain and the United Kingdom.
Which are the the similarities, differences and trends that can be used to improve VET and Erasmus+ in the European Union?	3. To detect best practices that can be used to improve VET and Erasmus+ in the European Union.	3.a) To determine the common factors in VET in France, Germany, Italy, Spain and the United Kingdom. 3.b) To determine the common factors in the Erasmus+ VET funding procedures in France, Germany, Italy, Spain and the United Kingdom. 3.c) To propose improvements of VET in the European Union. 3.d) To propose improvements of the Erasmus+ funding procedure.

Source: Created by the author.

2.3 What: Data analysis

Every comparative education research has to establish the *tertium comparationis* with a complete list of comparison categories (dimensions, parameters and indicators) related to the object of study.

The parameters and indicators that have been chosen offer information on the environment where VET takes place and illustrates issues that depend on the quality of the training of employees.

This comparative research analyses information structured in 4 categories: General context, VET systems, European Frameworks and Erasmus+ mobility. The parameters and indicators in each of the categories are those relevant to define the situation of VET in the target countries.

General Context

In the case of the General Context Category, the indicators include the national Demographics and Innovation parameters. This information was taken from different sources referenced in the World Bank Indicators database.

The indicators chosen are those that can have an influence and/or can be a result of the vocational training frameworks of each nation.

In the case of Demographics, the size and evolution of the population determine the resources for education and the GDP growth and unemployment rates are partly conditioned by the quality of the national workforce.

The parameter Innovation shows through the Research & Development indicators which is the national R&D focus that in combination with, among other factors, well-trained professional employees, produces the outputs expressed in indicators like high-technology exports or patent applications.

VET systems

The category VET systems provides the information in 4 parameters:

- *VET population, with parameters indicating the amount of students in different groups*
- *VET structures, including the parameters EQF level and VET studies in a chart*
- *Upper Secondary VET*
- *Higher Education VET, presenting in both these cases the values of the parameters Admission requirements, Description and Certification of these types of studies.*

The information from this category comes from UNESCO, as referenced by the World Bank, Eurydice and national education institutions, among others.

European VET Frameworks

The category European VET Frameworks includes data from the European Commision and the European and national institutions in charge of the mentioned frameworks.

It is divided in 3 parameters:

- *Qualifications frameworks*
- *Credits in VET*
- *Quality assurance*

Erasmus+ VET mobility

The fourth category, Erasmus+ VET mobility, has two types of indicators, part of national and regional parameters combined with funding data and regional VET students' population. The funding data comes from the National Erasmus+ Agencies and the information about the amount of students in each region is provided by the national official sources of this type of data.

TABLE 2 COMPARATIVE RESEARCH: CATEGORIES, PARAMETERS AND INDICATORS

Categories	Parameters	Indicators
General context	Demographics	Population, total
		Population growth (annual %)
		Population density (people per sq. km of land area)
		GDP Growth (annual %)
		Life expectancy at birth, total (years)
		Unemployment, total (% of total labor force) (national estimate)
		Long-term unemployment (% of total unemployment)
		Unemployment, youth total (% of total labor force ages 15-24) (national estimate)
		Share of youth not in education, employment, or training, total (% of youth population)
		Net migration (2012)
		International migrant stock (% of population) (2010)
	Innovation	Internet users (per 100 people)
		High-technology exports (% of manufactured exports)
		High-technology exports (current million US$)
		Patent applications
		Renewable electricity output (% of total electricity output)
		CO2 emissions (metric tons per capita) (2011)
		Research and development expenditure (% of GDP)
		Researchers in R&D (per million people)
		Technicians in R&D (per million people)
VET systems	VET population	Percentage of the total EU students in secondary vocational education, both sexes (%)
		Population of compulsory school age, both sexes (number)
		Population of the official age for post-secondary non-tertiary education, both sexes (number)
		Population of the official age for upper secondary education, both sexes (number)
		Percentage of students in lower secondary education enrolled in vocational programmes, both sexes (%)
		Percentage of students in lower secondary vocational education who are female (%)
		Percentage of students in secondary education enrolled in vocational programmes, both sexes (%)
		Percentage of students in secondary vocational education who are female (%)
		Percentage of students in upper secondary education enrolled in vocational programmes, both sexes (%)
		Percentage of students in upper secondary vocational education who are female (%)
		Enrolment in upper secondary vocational education, female (number)
		Enrolment in upper secondary vocational education, both sexes (number)
		Enrolment in secondary vocational education, both sexes (number)
		Enrolment in secondary vocational education, female (number)
		Enrolment in lower secondary vocational education, both sexes (number)
		Enrolment in lower secondary vocational education, female (number)
		Percentage of students in post-secondary non-tertiary education enrolled in vocational programmes, both sexes (%)
		Percentage of students in post-secondary non-tertiary vocational education who are female (%)

		Teachers in secondary vocational education, female (number) (2000)
		Teachers in secondary vocational education, both sexes (number) (2000)
		Annual statutory teacher salaries in public institutions in USD. Upper Secondary. 10 years of experience
		Expenditure on upper secondary as % of government expenditure on education (%) (IT,ES,UK 2011)
	VET structures	EQF levels
		VET studies
	Upper Secondary VET	Admission requirements
		Description
		Certification
	Higher Education VET	Admission requirements
		Description
		Certification
European VET Frameworks	Qualifications frameworks	European Qualifications Framework - EQF
		National Qualifications Framework - NQF
		Qualifications National Coordination Point - NCP
	Credits in VET	Description
		ECVET
		ECTS
	Quality assurance	Responsible institutions
		EQAVET
Erasmus+ VET mobility	National Indicators	National budget (€)
		Number of projects
		Biggest Project
		Smallest Project
		Average Project
		Amount of projects that represent 20% of the budget
		… percentage of nations total
		Amount of projects that represent 50% of the budget
		… percentage of nations total
		Most frequent size, in % of national budget
		amount of frequent size projects
		amount of frequent size projects, % over total
		… and represent % of the total budget
		Institutions that have always received funds (2014/2016)
		Average projects per institution (2014/2016)
		Students with a Fair Access to Funds – SFAF
		National equity
	Regional Indicators	Projects / Region
		€/ Region
		Students in regions with more than the national average budget
		Students in regions with less than the national average budget
		Students in regions with more than double the national average budget
		Students in regions with less than half the national average budget
		Students in regions with no access to funds
		Regions
		Regions with biggest project greater than 30%
		… percentage of nations total
		Regions with biggest project greater than 50%
		… percentage of nations total
		Regional Mobility Efficiency - RME

Source: created by the author.

2.4 Where

2.4.1 Researching boundaries

The present research is focused on the initial Vocational Education and Training offered in schools or in combination with workbased learning to young students between 15 and 19 years old to achieve official qualifications and certificates in France, Germany, Italy, Spain and the United Kingdom.

This study also describes Higher Education VET, but does not calculate how funds are being distributed. Higher Education in the mentioned countries is heterogeneous and it is difficult to separate the impact of the funds in VET institutions from the influence they also have on the traditional university courses.

Other professional courses like those offered by training institutions and companies to employed/unemployed workers, considered as part of the so called continuous Vocational Education and Training – cVET, are not part of this research.

The author has worked since 2006 in international VET projects with colleagues from all over Europe and visited VET institutions in France, Germany, Spain and the United Kingdom. All the information gathered through this personal experience is biased and has been filtered with the data from the primary and secondary information sources to produce an objective outcome.

VET and VET mobilities are subjects that are not frequently studied and, thus, there is not much previous information that can be used as a documentation background.

As an example of this situation the EU Commision in a study mentioned in June 2012:

> *This is the first time that such an exercise of gathering an inventory of mobility schemes has taken place, not only at European but also (possibly surprisingly) at national levels. In none of the 34 countries in this study […] is there any one place with a total overview of all mobility schemes operating for all the target groups covered by this study*
>
> (EU COMMISSION, 2012).

2.4.2 Students

The traditional official data sources do not provide in-depth information about the amount of VET students in the world.

Busemeyer and Schlicht-Schmälze point out the problems with UNESCO and OECD information:

The UNESCO data does not distinguish between school- and workplace-based VET systems and countries with extensive school-based VET, like France, are grouped with dual system countries like Germany.

Recent data from OECD data include information on the share of students in combined school- and apprenticeships. Another problem is that initial VET is sometimes treated as upper-secondary, sometimes as post-secondary or even as lower-secondary education, which leads to misclassifications and biases (Busemeyer & Schlicht-Schmälzle, 2014).

Eurostat also offers data, but, at the moment of the study, it did not offer information for all of the studied countries.

In all of these sources, UNESCO, OECD and Eurostat, the information was offered for the different countries at a national level, but they did not provide detailed data at the regional

level. To find the amount of students in each region, official statistics institutions in each country had to be used.

The information of the amount of full-time iVET students in each region was provided:

- *In France, by Centre d´etudes et de recherches sur les qualifications (CÉREQ, 2014)*
- *In Germany, by Statistik Portal (STATISTIK-PORTAL, 2015)*
- *In Italy, by ISTAT (ISTAT, 2013)*
- *In Spain, by Ministerio de Educación, Cultura y Deporte (MECD, 2015 B)*
- *In the United Kingdom – UK, by the UK Government for England (UK GOVERNMENT, 2012 E), Northern Ireland (UK GOVERNMENT, 2012 NI) and Wales (UK GOVERNMENT, 2014) and by the Scottish Government (SCOTTISH GOVERNMENT, 2013), in Scotland.*

Each of these information sources has different rules to count their iVET students that depend on how are their VET systems. For example, in the United Kingdom, there is a large amount of students that attend courses on a part-time basis. Statistics in the United Kingdom offer a conversion rate that establishes a relation between the part-time students and the amount of full-time students they would represent.

All the calculations and conclusions made in this research are made with nationally weighted values and national percentages to facilitate the comparison between the research areas. This means that the specific absolute amount of students is never used as a measurement tool. The Regional Mobility Efficiency – RME and the National Equity are weighted equations and the Students Fair Access to Funds – SFAF is a percentage value.

2.4.3 Regions

This reseach intends to provide information on how do the Erasmus+ funds reach the different regions in the European Union.

The regions used in the present research are based on the Nomenclature of Territorial Units for Statistics (NUTS), drawn up by Eurostat over 30 years ago in order to provide a breakdown of the economic territory of the European Union into territorial units for the production of regional statistics and for targeting political interventions at a regional level (EUROSTAT, 2015).

The NUTS serves several objectives:

> • *It ensures harmonised standards in the collection and transmission of regional data;*
>
> • *It guarantees that published regional statistics are based on comparable data;*
>
> • *It enables the analysis and comparison of the socioeconomic situation of the regions based on harmonised data;*
>
> • *Policy interventions such as the European Structural Funds can be specifically targeted to support disadvantaged and less competitive regions*
>
> (EUROSTAT, 2015).

The regions used in the present research are the biggest available NUTS regions in each country that have an autonomous influence over their education policies.

In the case of France, Spain and Italy the regions used are at level NUTS 2. In the case of Germany and the United Kingdom the regions are at level NUTS 1.

France rearranged their regions in January 2016. In this research this change has not been taken into account.

TABLE 3 RESEARCH REGIONS

France	Germany	Italy	Spain	United Kingdom
Alsace	Baden Württemberg	Abruzzo	Andalucía	East Midlands
Aquitaine	Bayern	Basilicata	Aragón	East of England
Auvergne	Berlin	Calabria	Canarias	London
Basse-Normandie	Brandenburg	Campania	Cantabria	North East
Bourgogne	Bremen	Emilia-Romagna	Castilla y León	North West
Bretagne	Hamburg	Friuli-Venezia Giulia	Castilla-La Mancha	Northern Ireland
Centre	Hessen	Lazio	Cataluña	Scotland
Champagne-Ardenne	Mecklenburg-Vorpommern	Liguria	Ciudad Autónoma de Ceuta	South East
Corse	Niedersachsen	Lombardia	Ciudad Autónoma de Melilla	South West
Franche-Comté	Nordrhein-Westfalen	Marche	Comunidad de Madrid	Wales
Haute-Normandie	Rheinland-Pfalz	Molise	Comunidad Foral de Navarra	West Midlands
Île-de-France	Saarland	Piemonte	Comunidad Valenciana	Yorkshire and the Humber
Languedoc-Roussillon	Sachsen	Puglia	Extremadura	
Limousin	Sachsen-Anhalt	Sardegna	Galicia	
Lorraine	Schleswig-Holstein	Sicilia	Illes Balears	
Midi-Pyrénées	Thüringen	Toscana	La Rioja	
Nord-Pas-de-Calais		Trentino Alto Adige / Südtirol	País Vasco	
Outre-Mer		Umbria	Principado de Asturias	
Pays de la Loire		Valle d'Aosta / Vallée d'Aoste	Región de Murcia	
Picardie		Veneto		
Poitou-Charentes				
Provence-Alpes-Côte d'Azur				
Rhône-Alpes				

Source: Created by the author with information from (EUROSTAT, 2015).

In the case of France, the NUTS 2 regions Guadeloupe, Martinique, Guyane, La Réunion and Mayotte have been considered together in the region as part of the NUTS 1 region Outre-Mer. The Provincia Autonoma di Bolzano/Bozen and the Provincia Autonoma di Trento make up the region Trentino Alto Adige/Südtirol.

2.5 When: The new Erasmus+ and the Europe 2020 Strategy

Erasmus+ integrates former programmes like the Long Life Learning Programme, Youth in Action, and the different international Higher Education and Sport programmes

Erasmus+ started in 2014 and will be active until 2020. It is the European programme in charge of fostering the development of transnational programmes in the areas of education, training, sport and youth policies. Erasmus+ is focused on the adaptation to a fast changing world, tackling youth unemployment and preparing the workers for highly skilled jobs.

Erasmus+ intends to demonstrate that it is better to invest at a European rather than at national level and proposes to focus on the people, institutions and systems, creating transnational synergies.

The current project analyses the funding process during the first 3 years of the programme and makes recommendations that can be used to improve Erasmus+ during the second half of the programme, from 2017 to 2020.

"The Copenhagen Declaration", convened in Copenhagen on 29 and 30 November 2002, by the European Ministers of Vocational Education and Training, and the European Commission, was focused on improving European cooperation in vocational education and training and started the renovation of VET in Europe. The "Bologna process" has managed to transform Higher Education in Europe, but the "Copenhagen process" is still nowadays trying to make VET in Europe converge.

Europe 2020 Strategy for the present decade, 2011-2020, is marked by the 2008 financial crisis and the aim to develop the knowledge-based economy defined in the Lisbon Agenda. Education focuses on key competences that include 'traditional' skills such as communication in one's mother tongue, foreign languages, digital skills, literacy, and basic skills in maths and

science, as well as horizontal skills such as learning to learn, social and civic responsibility, initiative and entrepreneurship, cultural awareness, and creativity.

The European Union - EU is currently facing a great challenge. The convergence of the VET policies is playing a key role in the process and this project intends to enlighten the VET stakeholders with an updated analysis of the situation in France, Germany, Italy, Spain and the United Kingdom during 2014-2016.

2.6 Mathematical tools for monitoring Erasmus+

The vocational education and training sector has two different funding programmes that foster the mobility of students, teachers and staff.

On one hand, Key Action 1 – KA103 provides grants in Higher Education. Higher Education in Europe includes university studies and VET training schemes offered at professional colleges. In some countries, universities offer HE VET studies and/or some professional colleges may provide degrees similar to those that can also be found at universities. For example, this is the case of the *Formación Profesional de Grado Superior* in Spain. These different institutions and the universities apply for the same KA103 call. As Higher Education institutions offer a heterogeneous collection of information difficult to standardize, their data has not been taken into account in the present study.

On the other hand, Key Action 1 – KA102 only provides grants to institutions working in initial vocational education and training, at secondary level. This is the reason why the present study has focused on the KA102 projects.

Each KA102 project can include mobilities dealing with students, teachers and staff. The details of how the budget of each project is split are not always available. Nevertheless, one can assume that the end beneficiary of the outcomes of the KA102 projects will always be the students of the region where the funds land. The mobilities are not assigned to students, teachers and staff to improve their education and employability on an individual basis. On the contrary, the outcomes of the KA102 target on improving the situation of the vocational education and training in the funded institutions and their regions as a whole. Thus the end beneficiaries are the present and future students located in the areas that receive the funds, even if they personally do not take part in any mobilities.

Current reports and information provided by the different stakeholders only focus on the amount of mobilities and projects allocated in each region and country. In the present study, the amount of students in each region has also been taken into account.

The objective of this study is to determine if the funds are being distributed homogeneously throughout the regions of France, Germany, Italy, Spain and the United Kingdom. If funds are being unevenly delivered it could result in an inequity situation, students living in specific regions might have greater chances to benefit from KA102 funds; other students might have less opportunities to benefit from them.

To simplify KA102, institutions with KA102 experience can apply for the "Erasmus+ VET Mobility Charter". This charter enables the holders to simplify their future applications and they will apply under KA116 instead of KA102. Thus, funding values for KA116 are taken into account to complement KA102.

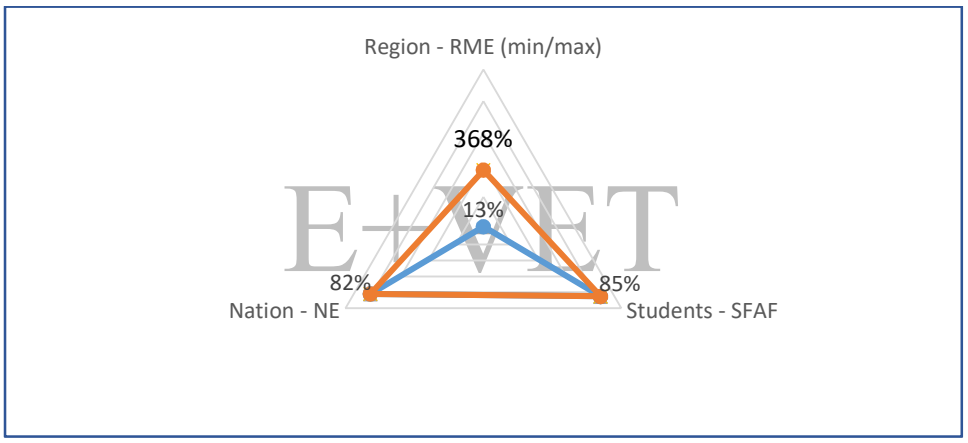
European funding programmes have the objective of redistributing wealth throughout the continent. These programmes aim to help disadvantaged groups. VET students are the target group of the KA102 funding call. It would make sense to distribute these grants homogeneously throughout all the European regions and the mathematical tools proposed in the current project show the inquities at an individual (students), regional and national level.

2.6.1 The three perspectives: Region, Student and Nation

In the present study the funding data and regional amount of VET students has been processed to obtain three perspectives:

- *Region; how are the different regions performing, which are receiving on average more funds per students, which are receiving less.*
- *Student; how many students have a fair possibility to benefit from the VET Erasmus+ funds.*
- *Nation; in what degree is each nation distributing the funds homogeneously.*

These three perspectives are analysed ith the tools described later in this chapter (Regional Mobility Efficiency, Students Fair Access to Funds and National Equity) and presented in this document in different forms, among others as radar charts.



Example: Radar chart with the German average values for the period 2014/2016 of the National Equity, the Students Fair Access to Funds and the minimum and maximum Regional Mobility Efficiency (RME values presented 10 times smaller) values assigned to their regions, as seen in 6.2.6 Erasmus+ VET mobility

To monitor Erasmus+ this research proposes to track specific key indicators that help understand how are the funds being distributed. These key indicators are listed on the next page.

TABLE 4 MONITORING ERASMUS+. KEY INDICATORS

	France	Germany	Italy	Spain	UK
National budget (€)					
Number of projects					
Biggest Project					
Smallest Project					
Average Project					
Projects / Region					
€/ Region					
Amount of projects that represent 20% of the budget					
… percentage of nations total					
Amount of projects that represent 50% of the budget					
… percentage of nations total					
Most frequent size, in % of national budget					
amount of frequent size projects					
amount of frequent size projects, % over total					
… and represent % of the total budget					
Students in regions with more than the national average budget					
Students in regions with less than the national average budget					
Students in regions with more than double the national average budget					
Students in regions with less than half the national average budget					
Students in regions with no access to funds					
Students with a Fair Access to Funds – SFAF					
National equity					
Regions					
Regions with biggest project greater than 30%					
… percentage of nations total					
Regions with biggest project greater than 50%					
… percentage of nations total					
Institutions that have always received funds (2014/2016)					
Average projects per institution (2014/2016)					

SPACE FOR DATA

Source: Compiled by the author. Key indicators that describe the situation of the funding procedures of nations.

2.6.2 Regional Mobility Efficiency – RME

This project proposes the Regional Mobility Efficiency – RME index to illustrate the equity/inequity of the funds that are being assigned to each of the regions.

The RME index indicates if a particular region is receiving more or less funds per student (*Funds per Student*$_{Region}$) than the total national funds per student average (*Funds per Student*$_{Nation}$).

EQUATION 1 REGIONAL MOBILITY EFFICIENCY – RME

$$Funds\ per\ Student_{Nation} = \frac{Funds_{Nation}}{Students_{Nation}}$$

$$Funds\ per\ Student_{Region} = \frac{Funds_{Region}}{Students_{Region}}$$

$$RME = \frac{Funds\ per\ Student_{Region}}{Funds\ per\ Student_{Nation}}\ (\%)$$

RME values greater than 100% indicate that the region is receiving more than the national average, RME values smaller than 100% indicate the region is receiving less than the national average.

Values of RME>200% indicate the region is receiving more than double the national student average. Values of RME<50% indicate the region is receiving less than half the national student average.

Example:

In 2014, in Germany there where 3,863,645 VET students. The German Erasmus+ National Agency, "*Nationale Agentur Bildung für Europa beim Bundesinstitut für Berufsbildung*" awarded that year the amount of 33,024,172 €.

$$Funds\ per\ Student_{Nation} = \frac{Funds_{Nation}}{Students_{Nation}} = \frac{33{,}024{,}172\ €}{3{,}863{,}645} = 8{,}55€/student$$

The region of Brandenburg had 70,313 students and received 744,069 €.

$$Funds\ per\ Student_{Region} = \frac{744{,}069\ €}{70{,}313} = 10{,}58\ €/student$$

Substituting these values in the RME equation:

$$RME = \frac{Funds\ per\ Student_{Region}}{Funds\ per\ Student_{Nation}} = \frac{10{,}58}{8{,}55} = 124\ \%$$

This means that the Brandenburg region received per student more VET Erasmus+ funds than the national average, as mentioned in Table 24 Germany - Erasmus+ VET Regional data 2014.

2.6.3 Students with a Fair Access to Funds - SFAF

According to the Cambridge Dictionary something is fair if "…it is reasonable and is what you expect or deserve" (CAMBRIDGE UNIVERSITY PRESS, 2016).

As a "Fair Access to Funds" could have different meanings for every student and as every individual has a biased opinion on what is fair it is impossible to determine a universally exact value for this indicator.

Even Unesco addresses equity and fairness in education with global terms, without offering specific limits:

> *Equity in education is the means to achieving equality. It intends to provide the best opportunities for all students to achieve their full potential and act to address instances of disadvantage which restrict educational achievement. It involves special treatment/action taken to reverse the historical and social disadvantages that prevent learners from accessing and benefiting from education on equal grounds. Equity measures are not fair per se but are implemented to ensure fairness and equality of outcome*
>
> (UNESCO, 2015).

The author has taken the risk of setting a band of "fair regions". The subjective decision taken is to define regions as fair when the students of these regions have access to more than half and less than double the national funds per student average. In other words, in the present research regions are being funded fairly when their RME is greater than 50% and smaller than 200%.

Adding up the amount of students located in the fair regions of a nation, it is possible to determine how many of the students are being offered a fair possibility to access funds.

This project defines the Students with a Fair Access to Funds – SFAF as the national percentage of students located in the regions of a nation with values of RMEs between 50% and 200%.

EQUATION 2 STUDENTS WITH A FAIR ACCESS TO FUNDS – SFAF

$$SFAF_{nation}(\%) = \sum_{50\% \leq RME_{region} \leq 200\%} 100 \cdot \frac{Students_{region}}{Students_{nation}}$$

Having regions with a great amount of VET Students with a Fair Access to Funds – SFAF would mean a great amount of VET students could have the opportunity to benefit from the outcomes of these KA102 programmes, even if they do not personally take part in mobilities. These students will study in regions where teachers, staff and other students will be travelling abroad, bringing back knowledge and best practices that will improve their local training sector.

It makes sense to state that a nation with a high SFAF is a nation where the KA102 funds are producing a high impact, higher than those nations with a lower SFAF.

Example:

Table 24 Germany - Erasmus+ VET Regional data 2014 shows the RME values for all the German regions in 2014.

GERMANY 2014	Budget	% €	Students	% of all students	RME
Baden Württemberg	**2930048**	**9%**	**598753**	**15,50%**	**57%**
Bayern	**5038164**	**15%**	**615672**	**15,94%**	**96%**
Berlin	4234163	13%	128579	3,33%	385%
Brandenburg	**744069**	**2%**	**70313**	**1,82%**	**124%**
Bremen	139997	0%	40405	1,05%	41%
Hamburg	1487212	5%	86538	2,24%	201%
Hessen	**1745261**	**5%**	**287652**	**7,45%**	**71%**
Mecklenburg-Vorpommern	**244831**	**1%**	**53136**	**1,38%**	**54%**
Niedersachsen	**4053705**	**12%**	**421219**	**10,90%**	**113%**
Nordrhein-Westfalen	**7452721**	**23%**	**894651**	**23,16%**	**97%**
Rheinland-Pfalz	283394	1%	192532	4,98%	17%
Saarland	70500	0%	52953	1,37%	16%
Sachsen	**770931**	**2%**	**147581**	**3,82%**	**61%**
Sachsen-Anhalt	1513174	5%	51410	1,33%	344%
Schleswig-Holstein	**1989378**	**6%**	**143968**	**3,73%**	**162%**
Thüringen	326624	1%	78283	2,03%	49%

Inserting the percentage of students from each of the regions with an RME between 50% and 200% in our equation

$$SFAF_{nation}(\%) = \sum_{50\% \le RME_{region} \le 200\%} 100 \cdot \frac{Students_{region}}{Students_{nation}}$$

$$= 15.50 + 15.94 + 1.82 + 7.45 + 1.38 + 10.9 + 23.16 + 3.82 + 3.73 = 83.68\%$$

it is possible to calculate that more than 4 out of 5 of the German VET students (SFAF=83.68%) could benefit from a fair access to funds in 2014.

2.6.4 National Equity - NE

The Regional Mobility Efficiency – RME and the Students Fair Access to Funds – SFAF are indicators that offer a good perception of equity in the different regions and how they affect the students, but do not calculate an exact value of the national equity of a country.

The example of a region with a lot of students and an RME near the 50% border can illustrate this situation. If the RME of the region is slightly above the 50% limit it will directly increase the national SFAF value and if it is slightly under 50% it will decrease the national SFAF value. Small variations of the RME can have big effects on the global national SFAF value.

The solution proposed is best approached using vector notation[1]. Let us consider a nation with n regions, and vectors $\vec{f} = (f_1, f_2, \dots, f_n)$ and $\vec{p} = (p_1, p_2, \dots, p_n)$, whose coordinates are, respectively, the funds and student population of each region. The total national funds are $f_N = f_1 + f_2 + \cdots + f_n$, and the national student population is $p_N = p_1 + p_2 + \cdots + p_n$.

Maximum equity will be reached when funds and population are, in relative terms, equally distributed.

In vector notation, this can be established as:

> Theorem: The distribution of funds is fair if (and only if) $\vec{f}$ and $\vec{p}$ are parallel vectors.
>
> Proof: Equity is achieved if, in each region, the ratio of funds per student equals the national average. Thus, a necessary and sufficient condition for equity is given by:

$$\frac{f_r}{p_r} = \frac{f_N}{p_N}$$

[1] (M. González Lázaro, personal communication, March 16, 2016)

for each region $1 \leq r \leq n$. A simple transposition of terms yields:

$$\frac{f_r}{f_N} = \frac{p_r}{p_N}$$

and therefore,

$$\frac{\vec{f}}{f_N} - \frac{\vec{p}}{p_N} = \vec{0}$$

which means that the vectors $\vec{f}$ and $\vec{p}$ are proportional and, indeed, parallel. QED

The vector notation developed so far allows us to treat all the regions within a nation on an equal footing. For instance, following the previous theorem, inequity can be equaled to a deviation from parallelism between $\vec{f}$ and $\vec{p}$. Recalling the proof of the theorem, it is logical to introduce the *inequity vector* $\vec{\delta}$ as:

$$\vec{\delta} = \frac{\vec{f}}{f_N} - \frac{\vec{p}}{p_N}$$

We can now reformulate our previous result as:

Theorem: There is equity if, and only if, $\vec{\delta} = \vec{0}$.

Therefore, the more $\vec{\delta}$ deviates from zero, the more inequity there is. For a given region, we can define the *regional inequity* as the corresponding component of the inequity vector:

$$\delta_r = \frac{f_r}{f_N} - \frac{p_r}{p_N}$$

This measure will be positive if the region receives more funds that correspond with its population, and negative otherwise, within the limits -1 and +1. At a global level, a measure of *national inequity* is given by the addition of the absolute values of the regional inequities:

$$National\ Inequity = \left\|\vec{\delta}\right\| = \sum_{r=1}^{N} |\delta_r|$$

Since the coordinates of $\vec{\delta}$ can be positive or negative, and take values between -1 and 1, the values of $\|\vec{\delta}\|$ range between 0 (absolute equity) and 2 (absolute inequity).

In order to establish a unit based range, and for the sake of clarity, the national inequity will be rescaled as a percentage, maximum 100%, and **equity** will be measured instead of ***in***equity:

$$National\ Equity\ = \left(1 - \frac{\|\vec{\delta}\|}{2}\right) \cdot 100\ (\%)$$

Or, as a function of coordinates:

EQUATION 3 NATIONAL EQUITY – NE

$$National\ Equity\ = \left(1 - \frac{\sum_{r=1}^{n} |\delta_r|}{2}\right) \cdot 100\ (\%)$$

This definition of National Equity has the advantage over the SFAF value that it provides an exact value that describes the fairness in the national distribution of funds that does not depend on having RMEs near the subjective limits [50%,200%]. The disadvantage is that it does not provide direct information on how many students are benefiting or not from the funds.

As both values, the National Equity and the SFAF indicator, offer complementary advantages, the present research uses both amounts to describe and analyse the fairness in the national distribution of funds.

As the total inequity in a region δ_r does not offer specific advantages other than being an intermediate step to calculate the National Equity – NE, only the Regional Mobility Efficiency – RME is taken into account in the Comparative Education Research to establish the conclusions about the different regions.

Example:

Table 24 Germany - Erasmus+ VET Regional data 2014 shows the regional inequity values for all the German regions in 2014.

GERMANY 2014	Budget	% €	Students	% of all students	Inequity δ_r	|Inequity| $\|\delta_r\|$
Baden Württemberg	**2930048**	9%	**598753**	15%	-0,0662	**0,0662 (7%)**
Bayern	5038164	15%	615672	16%	-0,0068	**0,0068 (1%)**
Berlin	4234163	13%	128579	3%	0,0949	**0,0949 (9%)**
Brandenburg	744069	2%	70313	2%	0,0043	**0,0043 (0%)**
Bremen	139997	0%	40405	1%	-0,0062	**0,0062 (1%)**
Hamburg	1487212	5%	86538	2%	0,0226	**0,0226 (2%)**
Hessen	1745261	5%	287652	7%	-0,0216	**0,0216 (2%)**
Mecklenburg-Vorpommern	244831	1%	53136	1%	-0,0063	**0,0063 (1%)**
Niedersachsen	4053705	12%	421219	11%	0,0137	**0,0137 (1%)**
Nordrhein-Westfalen	7452721	23%	894651	23%	-0,0059	**0,0059 (1%)**
Rheinland-Pfalz	283394	1%	192532	5%	-0,0413	**0,0413 (4%)**
Saarland	70500	0%	52953	1%	-0,0116	**0,0116 (1%)**
Sachsen	770931	2%	147581	4%	-0,0149	**0,0149 (1%)**
Sachsen-Anhalt	1513174	5%	51410	1%	0,0325	**0,0325 (3%)**
Schleswig-Holstein	1989378	6%	143968	4%	0,0230	**0,0230 (2%)**
Thüringen	326624	1%	78283	2%	-0,0104	**0,0104 (1%)**

In 2014 in Germany there were p_N = 3,863,645 students and the national funds received were f_N= 33.024.172 €. In Baden Württemberg there were p_r= 598,753 students and the region received f_r = 2,930,048 €.

To measure the inequity, the next equation can be used:

$$\delta_{Baden\ Württemberg} = \frac{f_r}{f_N} - \frac{p_r}{p_N} = \frac{2{,}930{,}048\ €}{33{,}024{,}172\ €} - \frac{598{,}753}{3{,}863{,}645} = -0{,}0662\ ,$$

in percentage, -7% (as mentioned in the results´ tables)

Taking into account the equation for the National Equity and adding up all the regional inequities mentioned in the above table:

$$National\ Equity = \left(1 - \frac{\Sigma_{r=1}^{n}|\delta_r|}{2}\right) \cdot 100\ (\%) =$$

$$\left(1 - \frac{\mathbf{0,0662} + 0{,}0068 + 0{,}0949 + 0{,}0043 + 0{,}0062 + 0{,}0226 + 0{,}0216 + 0{,}0063 + 0{,}0137 + 0{,}0059 + 0{,}0413 + 0{,}0116 + 0{,}0149 + 0{,}0325 + 0{,}0230 + 0{,}0104}{2}\right) \cdot 100(\%)$$

$$= \left(1 - \frac{0.3822}{2}\right) \cdot 100(\%) = 80{,}89\%$$

The German National Equity in 2014 was NE= 80.89%

II STATE OF THE ART

3. History of VET in Europe

Human beings have the ability to transform natural resources and create products. This knowledge has been used throughout history to dominate the rest of the species and compete between the different civilizations.

The workers´ skills are the key factors that make the difference when generating goods. A superior aptitude to create technology, products and services has the power to tip the scales.

The training of employees and the transfer of technical information have always played a crucial role in the development of human societies.

3.1 The Roman Empire

During the ancient Roman Empire period we can already find training associations that stuck to a set of procedures to transmit skills and guarantee quality. Javier Alvarado Planas (Alvarado, 2009) describes the Roman *collegia* as the first craft corporations found in Europe (Plutarco, Numa, 15 & Plinio, Hist. Nat. 34.1, as mentioned by Alvarado, 2009). The ancient law codified in the XII Tables describes different professional levels of associates (Digesto 47,22,4, as mentioned by Alvarado, 2009).

Roman politics permitted these associations until the public administration decided to take over their activities, so they could control the working agreements in areas that were critical for the empire. To compensate this intervention, the craft associations were granted exemption from military service (Not. Teod. 1,26, as mentioned by Alvarado, 2009), exemption from municipal tasks (Cód. Teod. 12,1, as mentioned by Alvarado, 2009), some tax exemptions (Cód. Teod. 14,2,2, as mentioned by Alvarado, 2009) and exemption from some public services.

> *We order that those that work in the activities mentioned in the following list, regardless of their place of residence, will be exempt from all the public services as long as they invest their time in learning their crafts. Hereby they can be more beneficial and teach their children: Architects, roof builders (*laquerarii*), plasterer, carpenters, doctors, quarry workers, silversmiths, builders, veterinary surgeons, construction workers (*quadratarii*), speakers (*barbaricarii*), pavement builders (*scansores*), painters, sculptors …*
>
> [author´s translation from the original text in Spanish from (Edict of Constantine year 337, as part of the Theodosian Code 13,4, as mentioned by Alvarado, 2009)].

The constraints hindered the productive power of the *collegia*. Not capable of fulfilling the state demands, their situation started to decline in the western Roman Empire. In contrast, the Justinian Code protected the privileges of these workers in the eastern Roman Empire. (Cod. Justin. 10.44.1; cf. Cód. Teod. 12.4.2, as mentioned by Alvarado, 2009). These workers used to meet on set dates at places labelled *scholae*.

Some medieval craft guilds could have inherited characteristics from the *collegia fabrorum*. A letter from Pope Gregory I to the bishop of Naples mentions in the 6th century problems with the soap makers of the city (Alvarado, 2009).

Venerable Bede mentions in one of his works in 675 A.D. that his master Benedict Biscop built in Wearmouth two churches with Roman techniques, hiring builders from Gaul. (Bedae Venerabilis Opera Historica, ed. Plumier, I, 368, as mentioned by Alvarado, 2009) This argument could prove that there were no more *collegia fabrorum* at that time in England and they had to be brought from Gaul.

Although the influence of the *collegia fabrorum* in the west European medieval guilds is unclear, it is proved that these Roman institutions were maintained across the eastern Roman Empire until the fall of Constantinople in 1453 A.D. (Alvarado, 2009).

3.2 The medieval guilds

Craft and merchant guilds were professional associations that dominated manufacturing and commerce between the 12th and the 18th century. Skills were transferred from one generation to the next thanks to training provided by guilds. Guilds all over Europe had their qualifications schemes and teaching methods. Apprentices were allowed to access on-the-job training and, after achieving the different skill-levels, they were granted permission to work as professionals.

The guild system defined three qualification levels: apprentice, journeyman and master (Wollschläger, Reuter-Kumpmann, 2004). Applicants had first to accomplish a test period during several weeks, before they were accepted in a guild. Women were only entitled to work as assistants. The food and accommodation were usually paid for by the family. The apprenticeship could last between two and four years, depending on the profession. At the end

of this period the apprentice had to pass an examination procedure that varied depending on the trade or craft.

After this first period of training, the trainees received a 'certificate of apprenticeship' and were accepted as part of the community of journeymen (Wollschläger & Reuter-Kumpmann, 2004). These qualifications were recognised internationally. The journeymen travelled abroad to increase their knowledge and skills and after acquiring enough know-how they would apply to a guild to be admitted as a master.

This international qualification framework and mobility system was accepted and promoted by the guilds throughout Europe during various centuries.

Russia was an exception as no guilds appeared in the country during the Middle Ages. At the end of the 17th century, Tsar Peter I had the desire to push forward the economy and invested in bringing to Russia the latest techniques in metallurgy, mining and ship building. Specialised schools were created to teach these skills to the population and technical training remained a political objective during the next centuries (Wollschläger & Reuter-Kumpmann, 2004).

The guilds ruled over most of Europe´s production scheme during eight centuries. It could seem logical to think that if the system lasted so long it was due to the convenience and efficiency of the organisations. Douglass C. North mentions that guilds offered during a long period of time 'internal codes of conduct' that 'made trade more profitable' (North, 1991, p. 107).

Sheilagh Ogilvie does not support this argument (Ogilvie, 2011). Ogilvie defends that guilds were only interested in defending and promoting their own interests, avoiding the redistribution of wealth beyond their control area and delaying the overall economic growth. Guilds were associations of merchants working in a particular town, specialised in a product or service. Merchant guilds could come together to operate in other regions, forming a so-called *hanse*.

One of the most important of these associations was the German Hanse. The German Hanse dominated commerce from the North Sea to the Baltic Sea during the 14th to the 18th century. It was a confederation of guilds located along the coast of northern Europe created with the aim of defending their economic interests and securing their trade routes with the less developed eastern Baltic regions.

The guilds operated like monopolies, fixing prices, limiting the supply and setting market conditions that would avoid competitors entering their controlled regions. They established lobbies that influenced the authorities to make rules that would protect their guild regulations. In return, the guilds paid fees, offered loans and even military and political support. In many cases, the members of the guilds were even the politicians of the towns, entitled to set the overall rules. These towns were controlled during centuries by families, members of guilds (Ogilvie, 2011).

3.3 From the Industrial Revolution to the Schuman Plan

In the 18th century, the Industrial Revolution brought to Europe new ways of training professionals.

During the Industrial Revolution, the labour market changed rapidly due to the new technologies and the sudden power gained by the capitalist investors.

The abolishment of the guilds system during the 19th century had different consequences across Europe (Psifidou, 2014) due to

- *the different speeds of industrialisation*
- *the influence of the different political, philosophical, cultural and religious movements.*

In the 19th and 20th century, "Liberalism" and "puritanism" influenced life and work. "Liberalism" stands for no intervention- nor protection- from the state; each person is responsible for his own destiny. Liberalism presumes that "free interaction of forces" stimulates the nation´s and its companies` wealth. "Puritanism" is the protestant moral code that expects its followers to be self-sacrificing and industrious citizens so they will be rewarded with prosperity. The liberal economic culture still has influence in current vocational training trends (Psifidou, 2014).

After World War II, Europe had to face great economic and social problems; high unemployment, housing shortages, difficulties with the health and education systems (Varsori, 2004). Each European nation committed itself to set clear objectives, like the goal of creating a 'welfare state' to meet the needs of the citizen 'from the cradle to the grave', established in the summer of 1945 by the new Labour Government in Britain. "Although the construction of a welfare state was expressed mainly in national policies, the same demand also became apparent as the first few steps were taken towards European integration" (Varsori, 2004). The overall reform of the education and vocational training system was seen as part of the desired welfare state.

An aim of the Marshall Plan was to update vocational training to help create a modern economic system. The Schuman Plan, launched in May 1950, was the true starting point for the process of European integration. In fact, it was to lead to the development of one of the first European social policies, under which vocational training was to have a certain role. When the French authorities put forward the plan for an integrated coal and steel community, Monnet and his colleagues realised that it would have a strong impact not just on production and the future of the coal and steel industries but also on the lives of thousands of workers in the coal and steel sector (Varsori, 2004).

3.3.1 France

The guilds were abolished in 1791, creating a 'crisis of apprenticeship' that lasted until World War I. The 19th century was characterised by the exploitation of child labour and the lack of qualified workers. Private and municipal institutions organised workplace schools and evening courses; the State was not involved in the education process (Troger, 2004).

The *École d'Arts et Métiers* – School of Art and Crafts, created in 1803, was an exception. This institution was the heir of the *École Nationale* - National School, institution based on the ideas of Duke François-Alexandre Frédéric de La Rochefoucauld-Liancourt (1747-1827) and supported by Napoleon. In 1806 it was moved to Châlons-sur-Marne and a second one was founded in Angers in 1815. These schools, now the *École Nationale Supérieure d'Arts et Métiers (ENSAM)* – National High School of Arts and Crafts, are still to be found on their original premises (Meyser, 2002, p. 123).

In 1879, the new Republican Government focused on education to tackle three objectives (Troger, 2004):

- *To limit the Church's control over education*
- *To educate youngsters with the spirit of the third Republic*
- *To train skilled workers for industry*

The Republicans created an alliance with some of the employers with two aims (Pelpel and Troger, 2001, as mentioned by Troger 2004).

On one hand, the State and local authorities funded technical schools that would train the best students from the elementary schools so they would become highly qualified technicians and even engineers (Legoux, 1972, as mentioned by Troger 2004). By the end of the 1930s

these technical schools were attending around 100.000 students, nearly the same as the *lyceés* (Troger, 2004).

On the other hand, they brought in new regulations to improve the training of blue- and white-collar workers. In 1919, the *Certificat d'Aptitude Professionnelle (CAP)* was created (Brucy, 1998, as mentioned by Troger 2004). Theoretical courses were offered to apprentices and in 1925 an apprenticeship tax was imposed on companies that were not training apprentices. In this case, the success was limited and the decision was taken to create the now called *lycées professionnels* (Troger, 2004).

After World War II the State decided to control education as part of the welfare concept. This format worked well until the 1960s: The employers did not have to invest in training new workers and the youngsters could achieve professional qualifications that would pave their way into a job (Troger, 2004).

The right to education and to vocational training was included in the French Constitution in 1958.

In 1959, Charles de Gaulle pushed forward a reform to increase compulsory education up to the age of 16 and to foster higher education. These reforms were underway until 1975: Engineering and commercial colleges were created and technological university studies were developed. This focus on higher education had a negative effect on the vocational training studies. Employers could easily hire university graduates for management tasks and would not offer these executive jobs to workers holding vocational diplomas. That meant that students would try to avoid studying vocational education to elude having limits on their future professional career (Troger, 2004).

To tackle this problem, the *baccalauréat professionnel* was created in 1985. These studies offer part of their training as work placements, in alternance. The alternance training is also

found at *lycées des métiers* (trade lycées). Another action taken to improve social recognition of the vocational studies is the creation of the 'job reference' documents, first called *réferentiels d'emplois* and later *réferentiels de formation*. These documents establish the relation between the content of training and the requirements of the employers (Eckert and Veneau, 2001, as mentioned by Troger 2004).

3.3.2 Germany

The guilds initially disappeared in 1811, but traditional craft education and training were restored in 1897. Two reasons can be found to justify this comeback (Wollschläger & Reuter-Kumpmann, 2004, p. 11):

On one hand, mechanisation of textile manufacture did not begin until the mid-19th century, but then the textile, iron, steel and mining industries developed fast. At the end of the 19th century the electrical, chemical and automobile industries were also becoming increasingly important. The strong international competition caused an increase in the demand for skilled workers.

On the other hand, the growing power of the workers was seen as a threat by the establishment and the government decided to foster the values found in the craft trades as a way to improve the social and political integration of apprentices.

During the 19th century, the apprentices often went to "continuation schools" in the evenings or on Sundays. At these institutions, the students learnt a combination of citizenship skills, subjects from primary education and technical knowledge needed in their jobs. At the end of the 19th century the continuation schools were transformed into vocational schools (Wollschläger & Reuter-Kumpmann, 2004, p. 11).

Until 1969, when the *Berufsbildungsgesetz, BBiG* (Federal Law on Vocational Education and Training) was sanctioned, the training of apprentices was determined by the employers, in particular by the semi-public *Industrie- und Handelskammern* – Industry and trade chambers - and the *Handwerkskammern* - crafts chambers (Busemeyer & Schlicht-Schmälzle, 2014, p. 63).

The chambers and strong employers´ associations limited the possibilities of poaching skilled workers and fostered investment in the training system. The adverse point of view was brought by the workers. Since the Weimar Republic (1919-1933), the trade unions had argued that the legislation should limit the dominance of the employers to avoid apprentices being used as cheap labour (Busemeyer & Schlicht-Schmälzle, 2014, p. 64).

The trade unions gained significance after World War II and managed to introduce the changes that appeared in the *Berufsbildungsgesetz.* Although the basic characteristics of the existing system were preserved, the Unions increased their influence in the trade and crafts chambers, in the procedures to reform and update regulations and in the definition and certification process of craft professions (Busemeyer & Schlicht-Schmälzle, 2014, p. 64).

3.3.3 Italy

Gabrio Casati designed in 1859 the first educational law for the, at that time, emerging new Italian state. This law decided to exclude *l´istruzione professionale* (professional training) from the *sistema scolastico nazionale* (national scholar system). The *ginnasio-liceo* offered the classical humanistic education and the *istituti tecnici* (technical institutes) provided lower and higher professional courses. The *Ministero di Agricoltura* (Ministry of Agriculture) established specific courses for agriculture, industry and commerce. Technical schools offered studies that combined theory and practice (Morandi, 2014, pp. 98,99).

In 1885, the Government created the possibility to establish local and regional agricultural schools focused to offer training possibilities for students with a low cultural basis. During 1907 and 1913 the focus for the *scuole professionali di Stato* (professional state schools) was to set up rationalising procedures to stabilise and secure their existence (Morandi, 2014, p. 101).

In 1918 the medium and large companies financed the *laboratori-scuole* (school laboratories). These institutions prepared workers with fast courses of less than 400 lecture days. The Gentile reform reinforced the difference between the patrons´ schools and the workers' schools. In 1923 and 1924 industrial training was reconfirmed to be assigned to popular worker or *primo grado* (initial) schools. In 1929, the *Ministero della Publica istruzione* (Ministry of Public education) created the *scuole secondarie di avviamento al lavoro* (secondary school for professional initiation). In 1931 the *scuole pratiche di agricoltura*, the *scuole commerciali* (schools of commerce), the *industriali* and the *laboratory-scuole* are merged into the *scuole tecniche biennali di tipo agrario, commerciale, industrial e artigiano* (technical schools for agriculture, commerce, industry and crafts) and offered studies that lasted 8 years divided into two blocks of 4 years each (Morandi, 2014, p. 102).

The republican Constitution of 1948 established the importance of the Regions. The Regions started to determine the policies of the training of the unemployed and the continuous training of workers. This position was enforced in 1970 due to the empowerment of the Regions. The *Cassa del Mezzogiorno* was a fund created in 1950 to finance projects of public interest in the meridional areas of Italy. During the 1950s there was a great outburst of the training offer throughout the country. The law of the 19th of January 1955 regulated the apprenticeships (Morandi, 2014, p. 104) .

The *scuole di avviamento profesional* dissappeared in 1962. The Statute of the Regions of 1970 reinforced their responsibility for non-scholar training and limited the basic school

training to the influence of the national State. This situation was reinforced in 2001. In 2007 the Government established that the *istituti professionali* (professional institutes) were analogue to the *istituti tecnici* (technical institutes). In 2010 the rules of the *istituti professionali* mention that they belong to the national school system, their courses last 5 years and the students receive at the end the diploma *d´istruzione secondaria superior* (Morandi, 2014, p. 107).

3.3.4 Spain

The 8th of June 1813 the Cadiz Cortes abolished the guilds. In the second paragraph of the Decree CCLXII, it mentions "*II. También podrán exercer libremente qualquiera industria ú oficio útil, sin necesidad de examen, título o incorporación à los gremios respectivos, cuyas ordenanzas se derogan en esta parte.*" - II. They will also be able to freely work in any industrial or profitable trade, without needing an exam, certificate or the membership to specific guilds, whose rules are abolished herewith [author´s translation from the original text in Spanish (Carrau, 2012, p. 64)].

During the 19th century, industrialisation developed only in the Basque Country and Catalonia (Merino, 2005, as mentioned by Homs, 2004). The political and social instability of the century did not support the creation of a vocational training system. Businesses carried out the preparation of their workers without any support from the State nor from any chamber of commerce. Only a few volunteer and/or Catholic institutions offered some education. Apart from these examples, only some big companies, situated in the Basque Country and Catalonia, would create, during the turn of the 19th century, training centres for apprentices, like the *Escuela del Trabajo* - Work School - created in Barcelona in 1913 (Homs, 2004).

1955 was the first time a complete industrial vocational training scheme was designed (Martínez Usarralde, 2002, as mentioned by Homs, 2004). The *sindicato vertical* – vertical

labour union- and the Catholic Church played an important role in defining this system, that would integrate the workers into Franco´s structure and provide skilled personnel for the emergent new industry. The new model started functioning in 1963 and was based on three levels: *preaprendizaje* – pretraining- two years, *oficialia* – "assistant", three years and *maestría* – master – two more years. As the State did not provide relevant financing, the church, the *sindicato vertical* and the big companies took over the creation of the apprentices´ schools that offered the workers´ children a way to find a job after a long training period.

In 1970, the *Ley General de Educación* – General Education Law - (Ley General de Educación, 1970, as mentioned by Homs, 2004) took into account the European idea mentioned in the *Libro Blanco* – White Book – of 1969 (MEC, 1969 as mentioned by Homs, 2004) that vocational training should not be an alternative path for the workers, but should be integrated in the education system and offer different gateways that would allow the citizens to gain a specialised education, adjusted to the work market needs. The law proposed three levels: FP I, compulsory for those students that did not achieve the *Graduado Escolar, EGB* – Basic General Education - , FP II, for students coming from *BUP* – Baccalaureate and FP III, that was never developed (Homs, 2004).

In 1990 the new law LOGSE introduced several changes in the education system, including the gateways mentioned in the *Libro Blanco*. Education was now compulsory up to the age of 16 and the students that decided to attend *Grado Medio* - the first level of vocational training - had first to achieve the *Graduado en ESO* – Degree in Compulsory Secondary Education (Homs, 2004). *Grado Superior* – Higher degree in VET - was meant for students that had passed the *Bachillerato*. Although the new system offered courses called *Garantía social* – Social guarantee, for students who did not manage the ESO certificate, the reality was that a lot of Spanish youngsters left the education system without a valid certificate. LOGSE included

vocational training in the *Institutos de Educación Secundaría IES*, Secondary Education Colleges (Homs, 2004).

The education laws passed in the following years *Ley Orgánica de la Calidad de la Educación 2002*, *Ley Orgánica de Educación* 2006 and *Ley Orgánica de la Mejora de la Calidad de la Educación 2013* have tried to offer, without finding a consensus among the education community, a solution to one of the highest students´ dropout rates in Europe.

3.3.5 The United Kingdom

The sudden capitalism that appeared with the birth of the Industrial Revolution in England during the second half of the 18th century brought an immediate need to hire a great amount of low-qualified workers. The seven-year training period apprenticeship scheme stipulated by the guild code suddenly became outdated. The Elizabethan Statute of Apprentices that dated back to 1563 (Deissinger, 1992, p. 34 et seq.) was abolished in 1814. The apprenticeship period was no longer a prerequisite to work and the tax rates for all taxpayers were levelled, the privileges of the guilds disappeared and this meant there were no practical reasons to belong to them (Deissinger, 2004).

In contrast with continental Europe, the production methods in England, mainly in the cotton industry, were completely updated during the 18th and 19th century. Under-age and untrained workers were hired. "In 1851, 41 % of Manchester's 12-year olds, 60 % of its 13-year olds and 76 % of its 14-year olds were gainfully employed" (Anderson, 1971; p. 75, as mentioned by Deissinger, 2004). "Towns grew around the factories. While more of England's population lived in the city than on the land by 1851, Germany only reached this level at the end of the 19th century, and France only after the First World War. In England, only a quarter of working men were still involved in agriculture around 1850; in Germany farm workers still

outnumbered those in industry in 1895" (Landes, 1983; p. 181, as mentioned by Deissinger, 2004).

"In describing the Anglo-Saxon relationship between educational progress and industrialisation, it is axiomatic that economics dictated what was to be done or not to be done in the non-economic field." (Deissinger, 2004)

The Factory Health and Morals Act of 1802 mentioned school education as complementary to apprentice training and the 1901 statute first specified that 12 was the minimum age for factory employment. "According to Tawney, in Liverpool in 1901 only 3.4 % of all 14-year olds received training, while 55.5 % worked as casual labourers in all manner of occupations (Springhall, 1986; p. 237, as mentioned by Deissinger, 2004). Tawney speaks of 'non-educational employment' (Tawney, 1909; p. 525, as mentioned by Deissinger, 2004), for which young people received no preparation in primary schools and no real tuition except perhaps rudimentary on-site training" (Deissinger, 2004).

During the 'textile phase of British industrialisation' (Hobsbawm, 1982; p. 111 et seq., as mentioned by Dessinger, 2004) the industry could rely on low skilled workers in order to be a leader in the world economy. This situation changed during the second half of the 19th century and this could be caused by the inadequate education of the worker who did not hold the demanded technical qualifications (Wiener, 1982, as mentioned in Dessinger, 2004).

The Acland Code established in 1894 the evening continuation schools for adult education, setting vocational training apart from these, to guarantee "a separate system governed by concepts such as freedom of employment and independence of the employer" (Deissinger, 2004).

Scotland decided in 1908 to take an opposite direction. An educational law decreed a school board would be responsible for guaranteeing the attendance of those over the age of 14 to a continuation school.

In 1944 the Educational Reform Act tried to offer under-educated youngsters in ages between 15 and 18 the creation of county colleges, these colleges were never founded. Fifteen years later the Crowther Report stated the problem: 'This report is about the education of English boys and girls aged from 15 to 18. Most of them are not being educated' (quoted by Perry, 1976; p. 139, as mentioned by Dessinger, 2004).

The Government committed itself to focus on vocational training in 1964, 1973 and during the Thatcher Government (1979 to 1990), offering financial incentives rather than reforming the system (Deissinger, 2004).

> *Two main trends characterise English vocational training policy of the last 20 years. One reflects the basic understanding that companies are responsible for designing vocational training programmes. This policy has always involved influencing the contours of vocational training paths. Examples are Youth Training Schemes (the name may constantly change, but the concept does not), currently under the guise of Foundation Apprenticeships, and (Advanced) Modern Apprenticeships.*
>
> *The other trend includes the implementation of a National Qualifications Framework and the development of the all-embracing 16-19 Curriculum in the 1990s (Higham et al., 1996; Dearing, 1995). However, the latter does not shape an independent, self-regulating vocational training system, but the integration of trades based on the concept of lifelong learning. The paths are clearly caught in the conflict between heterogeneous educational requirements and homogeneous training and qualification approaches, and thus constitute 'individualised' tracks. The most recent examples are the terminological convergence of youth training schemes and apprenticeships and the renaming of general national vocational qualifications as 'vocational A-levels', which is meant to emphasise their similarity to the secondary school certificate needed for university admission and their claim to be a part of the national qualifications framework* (Deissinger, 2004).

"*England has no clear institutional stipulations, legal regulations on training, and the various training providers act more or less autonomously, competing against one another in a*

variety of ways on the open training market and forging links with other players." (Reuling, 2001; p. 241 as mentioned by Deissinger, 2004).

3.3.6 Other countries in Europe

As seen in the cases of France, Germany, Italy, Spain and Germany, the development of VET systems during the 19th and 20th century went in different directions across Europe.

Under the influence of the French occupation, the guilds disappeared from The Netherlands in 1806. Around 1860 The Netherlands gradually started to create industries and the State started to finance the, at first private, *ambachtscholen* - vocational schools. The *burgeravondschool* was an evening school that was meant to offer general education, but also ended up focusing on technical training. The apprenticeship system became more common after World War II, but has not achieved the importance of "fulltime" school (Wollschläger & Reuter-Kumpmann, 2004, p. 11).

In the 19th century the Nordic states focused on agro-industry and domestic manufacture, integrating the traditions and interests of agriculture and crafts.

In Finland industry was focused on the manufacture and processing of agricultural and forestry products. After being ruled by Sweden and Russia, Finland became an autonomous principality within the Russian Tsarist Empire in 1809. Around 1840, the authorities created the first craft and commercial schools. Since 1890, the aspiration to leave the Russian influence encouraged industry and state-run vocational schools (Wollschläger & Reuter-Kumpmann, 2004, p. 12).

In the 1950s, the Government of Sweden started a process to transform the education system that lasted several decades. (Härnqvist, 1989 as mentioned by Busemeyer & Schlicht-Schmälzle, 2014).

Initially, Sweden's education system had different tracks in secondary education as well as an elitist higher education system. After an initial process of experimentation, the Government established the nine-year *grundskola* - comprehensive school - as the standard school in 1962; this was widely regarded as part of the 'Nordic model of education' (Antikainen, 2006 as mentioned by Busemeyer & Schlicht-Schmälzle, 2014).

Once lower secondary education was established, the next step was to overcome the distinction between VET and academic education at the upper secondary level. In the past, the traditional grammar school, *Gymnasium,* existed alongside and institutionally separated from a range of VET tracks offered in different school settings. In 1969, the Government passed a reform that intended to reduce the differences between VET and academic education and led to the full integration of VET tracks into the general secondary school in 1972. (Härnqvist, 1989: 25–26 as mentioned by Busemeyer & Schlicht-Schmälzle, 2014). To promote educational mobility, graduates from the VET track of the newly integrated upper secondary school could immediately proceed to higher tertiary education (Busemeyer & Schlicht-Schmälzle, 2014, p. 64).

Norway and, in some ways Denmark, also transferred the Swedish idea of integrating VET into their secondary education system. In Finland this unification was only accepted in lower secondary education and VET remained independent (Heikkinen, 2004, p. 40).

TABLE 5 CONTROVERSIES ON CONTINUING EDUCATION AND VET IN GERMANY AND NORDIC COUNTRIES.

Germany	**Norway**	**Sweden**	**Denmark**	**Finland**
1870-1920	**1910-40**	**1920-40**	**1880-1940**	**1880-1930**
Transformation towards double function of VET: **Facharbeiter-technik und Staatsbürgerlichkeit*	Separation of *VET from general education *apprenticeship from vocational school	Establishment of state-led educational system with socio-political function, including VET schools	Establishment of social partnership: Journeymen /workers + masters /employers in VET + cooperatives	Establishment of distinctive VET system promoting national industries, networks between administration, industry, schools and civil society
Occupational form of work: *Beruf* as overarching pedagogical principle	Political control of work /division of labour: national tariff perspective dominates VET	Technological and political basis of occupation in VET	Communitarian form of occupational work in VET	Combination of community and occupational citizenship in work and VET
From continuation school to vocational school; VET as component of education	Rejection of vocational continuation school; marginalisation of VET as education	Dominance of citizenship in continuation school; marginalisation of VET as education	Towards Youth schools; VET increasingly into a labour market category	Defence of vocational schools against vocationally oriented continuation school; VET as a specific form of education

Source: (Heikkinen, 2004, p. 41).

3.4 Contemporary views

3.4.1 Three perspectives: The economic, political and social models

Depending on how the industrial revolution developed in the different countries, different training frameworks appeared across Europe during the 19th century.

> *The transition from school to the world of work is very different in Germany and Britain. The contrast between these two countries is probably the most marked in Europe, although the British seem to feel that all mainland countries south of Scandinavia use a watered-down version of the German system or a variation on its theme. We consider that Germany has the most pronounced version of what we would call the typical continental model.*
>
> *These comments by Liverpool sociologist Ken Roberts, (2000; p. 65 et seq), may not be objective, but we believe that their directness demonstrates the difficulty even experts have in portraying the European vocational training landscape in a way that is easy to comprehend. If this applies to the variety of existing training systems, how much more difficult must it be to reduce the highly complex historical development of these qualification systems in order to extract common elements to which experts from various disciplines can relate*
>
> (Greinert, 2004, p. 17).

Wolf-Dietrich Greinert describes three different "work cultures" that represent predominant views of VET in the United Kingdom, France and Germany that have had great influence throughout Europe (Greinert, 2004).

United Kingdom - The economic, "market" culture

In this case, the capitalist investors offer the labour market specific skilled jobs. To be able to cover the demand of workers the companies promote specific training courses. The path from unemployment to the work place seems to be quite straightforward. The training of human resources tends to follow the needs of the market.

In this model, the capitalist investors can set the training trends, influencing the amount of population learning the different skills and thus guiding the conditions of the labour market.

Workers can get prepared for jobs faster and with specific skills that adapt to the tasks, but they tend to have less basic, transversal knowledge that would allow them to flexibly switch between tasks and activities.

France – The "political" culture

The guidelines of vocational education training in France are defined by the political order. The state as institution decides which are the fields that will demand skilled employees and sets up an educational plan to cope with these needs. This plan focuses on the country´s future as a whole. Workers receive broad knowledge that can be used in different situations.

Spain and Italy, countries studied in the present research, can be seen as examples of the political model. In the case of Italy, the different regions have been in charge of VET policies and thus, heterogeneous certifications can be found across the country.

Germany – The "social community" culture

In this model, the society as a whole sets the guidelines for the education of the future professionals. The chambers of commerce perceive the needs and receive information provided by the stakeholders in their area of influence and they work together with other chambers of commerce and the administration to provide a framework that will suit the short, mid and long-term needs of the nation. The stakeholders that are part of this system are the companies from different economic areas and trade unions. Although this system is focused on economic outcomes, it is not constrained by the short- term. The guidelines created provide a path to produce flexible workers that can easily transform their abilities in the future. Austria and Switzerland can also be seen to belong to this type of VET culture.

TABLE 6 THE THREE 'CLASSICAL' MODELS OF VOCATIONAL EDUCATION AND TRAINING

	The liberal market model: Britain	The state-regulated model: France	The dual corporate model: Germany
Who determines how vocational education and training is organised?	Negotiated 'in the market place' between representatives of labour, management, and providers of vocational education and training.	The state	State-regulated chambers of craft trades, arranged by profession
Where does vocational education and training take place?	There are many options: in schools, in companies, in both schools and companies, via electronic media, etc.	In special schools, so-called 'production schools'	In predetermined alternation between companies and vocational schools ('dual model').
Who determines the content of vocational education and training?	Either the market or the individual companies, depending on what is needed at the moment. The content is not predetermined.	The state (together with the social partners). It does not aim primarily to reflect practice in enterprises, but relies instead on more general, theoretical training.	Entrepreneurs, unions, and the state jointly decide.
Who pays for vocational education and training?	As a general rule, the people who receive the vocational education and training are also the ones who pay for it. Some companies finance certain courses, which they themselves provide.	The state levies a tax on companies and finances vocational education and training, but only for a certain number of applicants each year.	Companies finance training within the enterprise and can set off the cost against tax. Trainees are paid a contractually determined sum. Vocational schools are financed by the state.
What qualifications are gained at the end of vocational education and training, and to what opportunities do these qualifications lead?	There is no monitoring of training, nor are there universally accredited final examinations	There are state certificates which also entitle the best graduates to go on to higher courses.	The qualifications are generally recognised as entitling their holders to work in the relevant occupation and to go on to higher courses.

Source: (Wollschläger & Reuter-Kumpmann, 2004, p. 9)

3.4.2 The qualification styles

In contrast with the output paradigm described by Greinert, Thomas Deissigner proposes to characterise VET systems depending on input factors called qualification styles (Heikkinen, 2004b) with their structural and functional dimensions:

> *(a) political and organisational regulation frameworks for vocational training processes (ordnungspolitisch-organitorische Rahmen des Qualifizierungsprozesses);*
>
> *(b) didactic-curricular orientation of vocational training processes (didaktisch-curriculare Ausrichtung des Qualifizierungsprozesses);*
>
> *(c) the place of the vocational training process in the context of socialisation (Verortung des Qualifizierungsprozesses im Sozialisationszusammenhang).*
>
> *As an example of qualification styles, Deissinger charaterises Germany, which represents:*
>
> *(a) cooperation of State and industry in giving competing regulations;*
>
> *(b) aims and contents of training oriented towards complex qualification profiles (occupational principle, Berufsprinzip);*
>
> *(c) pedagogical relevance of socialisation in VET, which mediates between general schooling and employment and establishing a learning environment separate both from school and employment*
>
> *Deissinger's concept of 'qualification', based on Beck, means knowledge, abilities and attitudes of a person in relation to demands of a (certain) work-place. It 'describes how far the capacities of an individual facilitates/enables them to meet or fulfil the necessary functions' (of an occupation).*
>
> (Heikkinen, 2004b, p. 100).

3.5 Summary: From divergence to convergence

In the current chapter, one can read that during the Roman Empire and the Middle Ages there was a quite homogeneous professional training system that even included international mobility periods as part of the education of the apprentices. Qualifications were valid internationally and guaranteed performance quality. Skilled workers could learn, teach and work all over Europe.

Norbert Wollschläger and Helga Reuter-Kumpmann title „From divergence to convergence“ to characterise their article „A history of vocational education and training in Europe“ (Wollschläger & Reuter-Kumpmann, 2004). They state the divergence starts in Europe with the end of the guilds, at the beginning of the 19th century, and the convergence begins with the Treaty of Paris, with the creation of the European Coal and Steel Community (ECSC) in 1951.

In the next chapter, one can discover which have been the steps taken in Europe to try to reach a situation that already existed in the past and vanished with the Industrial Revolution; a common VET system that fostered mobility, quality and international recognition of professional certifications throughout Europe.

4. History of the VET policies in the European Union

World War II demonstrated that Europe only had a future if the countries were to work and collaborate together. Peace could only be possible with stability in the region.

Social and economic stability depend on the prosperity of its population. The stakeholders involved in the European convergence process have tried to increase this wealth with specific actions that target the professional training of European citizens.

EU policy has produced actions in different areas of education. The present chapter focuses on the EU activities that have had a direct influence on VET and its mobility programmes. To help understand the different institutions and procedures Table 7 EU Institutions and Table 8 EU Types of legislation offer a description of terms used in this text.

4.1 The Treaties of Paris (1951) and Rome (1957)

French foreign minister Robert Schuman declared on 9 May 1950 “World peace cannot be safeguarded without the making of creative efforts proportionate to the dangers which threaten it.” As a result of The Schuman Declaration (Schuman, 1950), the countries in Europe started to work together to make war between France and Germany “not merely unthinkable, but materially impossible”.

As a results of these efforts, the Treaty of Paris (ECSC, 1951) founded in 1951 the European Coal and Steel Community. France, Germany, Italy and the Benelux countries came together to foster the movement of coal and steel and free access to sources of production. Also, a common High Authority was established to supervise the market, control the competition rules and price transparency. This treaty is the origin of the contemporary European institutions. Article 56 c) of the Treaty of Paris mentions the need for financing retraining measures to help workers acquire new skills and change their work, in case new industrial techniques decrease the demand of outdated technicians. Article 56 c) can be seen as the seed of the Lifelong Learning Programme and the knowledge-based economy of the Lisbon Agenda.

The Treaty of Rome that established the European Economic Community (EEC, 1957) "determined to lay the foundations of an ever closer union among the peoples of Europe, resolved to ensure the economic and social progress of their countries by common action to eliminate the barriers which divide Europe, affirming as the essential objective of their efforts the constant improvements of the living and working conditions of their people”.

The following articles found in the original text of the Treaty of Rome focus on vocational education and training:

Article 57.1 proposes the establishment of “directives for the mutual recognition of diplomas, certificates and other titles”.

Article 118 empowers the Commission to promote "close cooperation between Member States in the social field, particularly in matters relating to: [..] professional training and improvement."

Article 125 establishes that part of the funds of the *Fonds Social Européen* (European Social Funds) will be used to retrain unemployed workers.

Article 128 states "*le Conseil établit les principes généraux pour la mise en œuvre d'une politique commune de formation professionnelle qui puisse contribuer au développement harmonieux tant des économies nationales que du marché commun."*, the Council establishes the general principles to create a vocational education common policy that can contribute to the harmonious development of the national economies and the common market.

Javier M. Valle states that articles 57, 118 and 128 demonstrate that "the European Union has had an interest in fostering Vocational Education and Training from its very beginning" [author´s translation from the original text in Spanish (Valle, 2006, p. 17)].

4.2 The 10 principles (1963) and their consequences

Having regard to the Treaty of Rome establishing the European Economic Community, and in particular Article 128, the Council decided on 2 April 1963 (63/266) to lay down the "general principles for implementing a common vocational training policy" (COUNCIL OF THE EUROPEAN ECONOMIC COMMUNITY, 1963). As mentioned by Javier M. Valle (Valle, 2006, pp. 18,19), this decision focuses on two main objectives. On the one hand, it mentions the urgent need to adapt workers´ professional qualifications to the changes in production technology. On the other hand, a common vocational training policy would contribute to the harmonious development both of the national economies and of the common market.

The ten principles of this decision are summarised as follows (COUNCIL OF THE EUROPEAN ECONOMIC COMMUNITY, 1963 as mentioned by Valle, 2006, pp. 18, 19):

> ***First principle:*** *"A common vocational training policy means a coherent and progressive common action which entails that each Member State shall draw up programmes and shall ensure that these are put into effect [... and] must enable every person to receive adequate training, with due regard for freedom of choice of occupation, place of training and place of work."*
>
> ***Second principle:*** *"The common vocational training policy shall have the following fundamental objectives:*
>
> *(a) To bring about conditions that will guarantee adequate vocational training for all;*
>
> *(b) To organise in due course suitable training facilities to supply the labour forces required in the different sectors of economic activity;*
>
> *(c) To broaden vocational training on the basis of a general education, to an extent sufficient to encourage the harmonious development of the personality and to meet requirements arising from technical progress, new methods of production and social and economic developments;*
>
> *(d) To enable every person to acquire the technical knowledge and skill necessary to pursue a given occupation and to reach the highest possible level of training, whilst encouraging, particularly as regards young persons, intellectual and physical advancement, civic education and physical development;*

(e) To avoid any harmful interruption either between completion of general education and commencement of vocational training or during the latter;

(f) To promote basic and advanced vocational training and, where appropriate, retraining, suitable for the various stages of working life;

(g) To offer to every person, according to his inclinations and capabilities, working knowledge and experience, and by means of permanent facilities for vocational advancement, the opportunity to gain promotion or to receive instruction for a new and higher level of activity;

(h) To relate closely the different forms of vocational training to the various sectors of the economy so that, on the one hand, vocational training best meets both the needs of the economy and the interests of the trainees and, on the other hand, problems presented by vocational training receive the attention which they deserve in business and professional circles everywhere.

Third principle *"When the common vocational training policy is put into operation, special importance shall be attached [..] to forecasts and estimates, at both national and Community levels, of the quantitative and qualitative requirements of workers in the various productive activities [..] during his vocational training and throughout his working life".*

Fourth principle *"[..] the Commission shall carry out any studies and research in the field of vocational training which will ensure attainment of a common policy, in particular with a view to promoting employment facilities and the geographical and occupational mobility of workers within the Community [..]"*

Fifth principle *"In order to promote a wider knowledge of all the facts and publications concerning the state and development of vocational training within the Community, and to help keep current teaching methods up to date, the Commission shall take all suitable steps to collect, distribute and exchange any useful information, literature and teaching material among the Member States. [..]"*

Sixth principle *"In co-operation with the Member States, the Commission shall encourage such direct exchanges of experience in the field of vocational training as are likely to enable the services responsible for vocational training and specialists in such field to acquaint themselves with and study the achievements and new developments in the other countries of the Community [..]"*

Seventh principle *"The suitable training of teachers and instructors, whose numbers should be increased and whose technical and teaching skills should be developed, shall be one of the basic factors of any effective vocational training policy. [..]"*

Eighth principle *"The common vocational training policy must, in particular, be so framed as to enable levels of training to be harmonised progressively. [..] The Member States and the Commission shall encourage the holding of European competitions and examinations."*

> ***Ninth principle*** *"In order to contribute to the achievement of an overall balance between the supply of and demand for labour within the Community [..]."*
>
> ***Tenth principle*** *"[..] particular attention shall be given to the special problems concerning specific sectors of activity or specific categories of persons; special measures may be taken in this respect."*

Taking into account the fourth principle, the Council of the European Economic Community created the Advisory Committee on Vocational Training - ACVT, (63/688/EEC) (COUNCIL OF THE EUROPEAN ECONOMIC COMMUNITY, 1963 B). This Committee included two representatives of the Government, two representatives of trade unions and two representatives of employers' organisations of each Member State and would meet, at least, twice a year. As mentioned by Javier M. Valle (Valle, 2006, pp. 19,20), the Rules of the Advisory Committee on Vocational Training were modified (68/189/EEC) in 1968 (COUNCIL OF THE EUROPEAN COMMUNITIES, 1968).

In order to adapt the size of the ACVT to a European Union of 25 Member States, the 26 February 2004 (2004/223/EC) new rules were set (COUNCIL OF THE EUROPEAN UNION, 2004). These new rules establish, among others, that the Committee "shall consist of three members for each Member State, there being one representative for each interest group of national governments, trade unions and employers' organisations." and "The term of office of members shall be three years."

The ACVT is currently focused on how to reach the Europe 2020 objectives of a smart, sustainable and inclusive growth, as well as in practical instruments:

- *Providing adequate training for all, for harmonious development of personality and to keep pace with the social and economic developments and technical progress;*
- *Forecasting needs in the different sectors to meet the requirements of the labour market;*

- *Providing guidance to the young as well as to adults;*
- *Mutual learning between Member States through exchanges, study seminars, visits;*
- *Training teachers and instructors because they are responsible for transmitting knowledge and motivating young persons;*
- *Standardizing the descriptions of qualification at the various levels of training between Member States to improve people's ability to move around to train, study and work;*
- *Re-training and up-skilling to ensure people can keep pace with the quickly evolving labour market.*

(ACVT, 2013).

In 1964, the Commission drafted an Action programme on common vocational training policy. It was divided into two parts, agriculture and other fields of work. The defined objective of the common action was to establish a system offering 'all young people of the Community, and when necessary adults, an appropriate opportunity for training', (ASCE, BAC 6/1977, 679. Projet de programme d'action en matière de politique commune de formation professionnelle [Draft action programme on a common vocational training policy], 1964 as mentioned by Petrinini, 2002). This Programme was meant to be an intermediate stage between the 10 principles and the tangible proposals that the Commission would be presenting to the Council or Member States (Petrini, 2002, p. 31).

In 1966 the Commission made on 18 July 1966 a Recommendation to the Member States about professional guidance (EUROPEAN COMMISSION, 1966). This recommendation mentions that professional guidance in the Member States had not been sufficiently developed. Hence they should foster the guidance activities, assigning resources and increasing the collaboration between the States. This text recommended to the Member States that they:

- *support the development of vocational guidance activities for young people and adults*
- *adapt the organizational structure and the means of vocational guidance services to the needs of the population*
- *ensure greater continuity of guidance action, establish close liaison with the employment services, and strengthen the general coordination of guidance activities*
- *strengthen collaboration at Community level*

In April 1970, Luxembourg hosted the first tripartite conference that included members of the unions, employers' associations, the Commission and the Labour Ministers of the Six. "On that occasion many delegates put forward the idea of creating a standing committee on employment, and this was set up a few months later. In this context the launching of a European social policy, with the inclusion of vocational training, became an obvious topic of debate within the European Community" (Varsori, 2004, p. 85).

In 1971 the Council adopted at its 162nd session, held on 26 July 1971, the General guidelines for drawing up a Community programme on vocational training (COUNCIL OF THE EUROPEAN UNION, 1971). In this text:

> *[..] The Commission stated that the work undertaken by virtue of that Decision [63/688/EEC] had not yielded the expected results, in particular for the following three reasons:*
>
> *- experience of methodology was necessary at the outset if abstract principles were to be successfully converted into working projects,*
>
> *- short-term projects (for example, exchange of information) had not been sufficiently distinguished from more long-term objectives (for example, alignment of training standards and systems, mutual recognition of diplomas, compilation of statistics),*

- the available resources were inadequate.

4. Therefore, renewed effort must be made at Community level in all aspects of vocational training, including vocational guidance and information, in order to reinforce and render more effective the work already undertaken.

5. In order to carry out its ideas the Commission would, after consulting the Advisory Committee on Vocational Training, draw up a new programme and submit it to the Council for adoption by mutual agreement.

This programme, the final objective of which must be to develop a common vocational training policy, should form part of an increasingly active Community employment policy of which the European Social Fund among others is an instrument, while at the same time fulfilling the need for general education and social betterment of the workers. This programme should aim at gradually aligning training standards within the Community and be based on the following guidelines. [..]

It was also in 1971 that the EEC started to take education as a whole into account. The Commission entitled Altiero Spinelli to report about the situation of education in Europe and his group of experts produced the documents *Bilan et perspective de factivité du groupe enseignement et éducation* and *Memorando pour une action communautaire dans le dómaine de la culture* that described the actions taken by the EEC until that moment (Valle, 2006, p. 31).

In 1972 the Commission assigned Henri Janne the task of formulating a proposal with ideas for a future action programme (Valle, 2006, p. 31). The report *Pour une politique communautaire de l´éducation* - For a Community policy on education - created with the information provided by 34 experts from different countries, stated "Education is already a recognized responsibility in the framework of Community policy" (Janne, 1973, p. 49) and "The vast majority of our interlocutors believe that the field of permanent education should be the priority one for Community intervention" (Janne, 1973, p. 54).

Some conclusions of the Janne Report were:

(i) It is advisable scrupulously to respect national structures and traditions where education is concerned, but to promote a necessary harmonization by means of

> *permanent concerted action at all levels and through more and more educational exchanges. [..]*
>
> *(iv) It is advisable to envisage the creation of an 'Educational and Cultural Committee' on the model offered by the Economic and Social Committee;*
>
> *(v) If the member countries discover that they have truly common objectives and an adequate feeling of European specificity, the idea of a 'European Charter of Education', which would provide a framework for the whole of educational thought in our region of the world, should be considered;* (page 51)
>
> *[..] the Community must make appropriate arrangements to stimulate exchanges of teachers, pupils and students. With regard to young people the solution of the problem of the equivalence of degrees and diplomas constitutes a prerequisite",* (page 53).

As a result of the influence of the work carried out by Spinelli and Janne the Ministers of Education, meeting within the Council, decide the Resolution of 6 June 1974 on cooperation in the field of education. This resolution establishes in point II the following priority spheres of action:

> *- promotion of closer relations between educational systems in Europe,*
>
> *- compilation of up-to-date documentation and statistics on education,*
>
> *- increased cooperation between institutions of higher education,*
>
> *- improved possibilities for academic recognition of diplomas and periods of study,*
>
> *- encouragement of the freedom of movement and mobility of teachers, students and research workers, in particular by the removal of administrative and social obstacles to the free movement of such persons and by the improved teaching of foreign languages,*
>
> *- achievement of equal opportunity for free access to all forms of education.*

In point IV it establishes "In order to foster action in the fields mentioned under point II, an Education Committee shall be set up, composed of representatives of the Member States and of the Commission."

The 1976 Action Programme that focused on the guidelines of this 1974 resolution and the creation of the Education Committee proved to be decisive in the following years (Valle, 2006, p. 40).

During the 60s and beginning of the 70s the Economic and Social Committees (ESC) studied and informed about the situation of vocational training in Europe. The ESC worked with determination with the issue of vocational training at a time when, in the early 1960s, both the Council and the Commission were focused on other European matters. In 1973, the ESC prepared its "Study of the training and vocational training systems in the European Communities". This report requested the creation of a European institute for the scientific study of vocational training (Dundovich, 2002, p. 46), the future Cedefop.

4.3 Cedefop

On 10 February 1975 the Council of Ministers announced the creation of a European Centre for the Development of Vocational Training – Cedefop (COUNCIL OF THE EUROPEAN COMMUNITIES, 1975). Initially its seat would be West Berlin. The Board would consist of nine representatives of the Governments, three of the Commission, six of the unions and six of the employers (Guasconi, 2002, p. 57).

Article 2 of (337/75/EEC) mentions (COUNCIL OF THE EUROPEAN COMMUNITIES, 1975):

> *1. The aim of the centre shall be to assist the Commission in encouraging, at Community level, the promotion and development of vocational training and of in-service training. To that end, within the framework of the guidelines laid down by the Community, it shall contribute, through its scientific and technical activities, to the implementation of a common vocational training policy. It shall, in particular, encourage the exchange of information and the comparison of experience.*
>
> *2. The main tasks of the centre shall be : — to compile selected documentation relating in particular to the present situation, the latest developments and research in the relevant fields, and to matters of vocational training structure ; — to contribute to the development and coordination of research in the above fields ; — to disseminate all useful documentation and information ; — to encourage and support any initiative likely to facilitate a concerted approach to vocational training problems. The centre's activity in this respect shall deal in particular with the problem of the approximation of standards of vocational training with a view to the mutual recognition of certificates and other documents attesting completion of vocational training; — to provide a forum for all those concerned.*
>
> *3. In its activities the centre shall take into account the links which exist between vocational training and the other branches of education.*

At a meeting of the Management Board, held in July 1976, it was stated that 'the Centre should not duplicate work already being done nor attempt to formulate national policy' and that 'the Centre should not give undue priority to harmonisation but pay regard to the nature and differences which do exist in the various countries' (Cedefop – Minutes of the fourth meeting

of the Management Board – Berlin, 8 July 1976. Cedefop Archives, as mentioned by Varsori, 2004, p, 90).

> The Centre's main objectives were:
>
> *(a) the publication of a bulletin;*
>
> *(b) 'to collect and process documentation and disseminate existing information';*
>
> *(c) to launch studies on subjects such as 'youth unemployment, especially in relation to the transition from school to work' – this being chosen as the main priority – 'women, in particular married or older women, wishing to re-enter the labour force', 'continuous education and training', 'drawing up of a multilingual glossary on vocational training', 'establishment of comparative studies on national vocational training systems'*
>
> (Cedefop. Working programme 1977. Minutes of the fifth meeting of the Management Board – Berlin, 15-16 November 1976. Cedefop Archives, as mentioned by Varsori, 2004, p, 90).

In 1994 the Cedefop moved to Thessaloniki (Greece). Germany was about to host the future Central European Bank, and at that time Greece had no European organisation or institution within its territory. To foster a political equilibrium, the Council thought it was convenient to transfer the Cedefop to Greece. Cedefop's budget was significantly increased (by approximately 48 %) to ECU 16.5 million in 1995, settling at about ECU 14.5 million during the subsequent years. There was also an increase in the number of Cedefop staff members to 79 (Varsori, 2004, p. 95).

TABLE 7 EU INSTITUTIONS

Institutions or term	Definition
European Parliament	Represents the EU's citizens and is directly elected by them
European Council	Consists of the Heads of State or Government of the EU Member States
Council	Represents the governments of the EU Member States and is formed by one minister from each Member State. If, for example, the Council is to discuss environmental issues, the meeting will be attended by the environment minister from each EU Member State and is known as the "Environment Council"
European Commission	Represents the interests of the EU as a whole and is formed by a college of Commissioners, one from each Member State. In many areas it is the driving force within the EU's institutional system: it proposes legislation, policies and programmes of action and is responsible for implementing the decisions of the European Parliament and the Council. It also represents the Union to the outside world with the exception of the common foreign and security policy.
European Economic and Social Committee	Represents civil society groups such as employers, trade unions and social interest groups
Committee of the Regions	Ensures that the voice of local and regional government is heard. The Council and the Commission must consult the CoR on matters that concern local and regional government, such as regional policy, the environment, education and transport.
European Central Bank	Manages the euro and euro area monetary policy. The members are the euro area national central banks

Table created with the information provided by "How the European Union works" (EUROPEAN COMMISSION, DIRECTORATE-GENERAL FOR COMMUNICATION, 2012)

The European Council defines the general political direction and priorities of the EU but it does not exercise legislative functions. Generally, it is the European Commission that proposes new laws and it is the European Parliament and Council that adopt them. The Member States and the Commission then implement them.

In addition to the Commission–Council–Parliament triangle, there are a number of advisory bodies that must be consulted when proposed legislation involves their area of interest. Even if their advice is not taken, this contributes to the democratic oversight of EU legislation by ensuring that it is subject to the widest scrutiny.

These bodies are the European Economic and Social Committee and the Committee of the Regions. In addition, other institutions and bodies may be consulted when a proposal falls within their area of interest or expertise. For example, the European Central Bank would expect to be consulted on proposals concerning economic or financial matters.

Source: (EUROPEAN COMMISSION, DIRECTORATE-GENERAL FOR COMMUNICATION, 2012).

TABLE 8 EU TYPES OF LEGISLATION

Types of legislation	Description
Regulation	A regulation is a law that is applicable and binding in all Member States directly. It does not need to be passed into national law by the Member States although national laws may need to be changed to avoid conflicting with the regulation.
Directive	A directive is a law that binds the Member States, or a group of Member States, to achieve a particular objective. Usually, directives must be transposed into national law to become effective. Significantly, a directive specifies the result to be achieved: it is up to the Member States individually to decide how this is done.
Decision	A decision can be addressed to Member States, groups of people, or even individuals. It is binding in its entirety. Decisions are used, for example, to rule on proposed mergers between companies.
Recommendations	Recommendations and opinions have no binding force.

Table created with the information provided by "How the European Union works" (EUROPEAN COMMISSION, DIRECTORATE-GENERAL FOR COMMUNICATION, 2012)

4.4 From the creation of the Cedefop (1975) to the Lisbon Agenda (2000)

The resolution of the Council and of the Ministers of Education, meeting within the Council, of 9 February 1976 comprised the first action programme in the field of education (COUNCIL OF MINISTERS OF EDUCATION, 1976).

This resolution for the first action programme in education mentioned, among others:

> *[..]*
>
> *2. The following measures will be implemented at Community level:*
>
> *— exchange of information and experience concerning the organization of suitable types of teaching, taking the form of a limited number of pilot schemes to enable these types of teaching to be compared and assessed, and cooperation in the training of teachers required to assume responsibility in this field,*
>
> *[..]*
>
> *3. It is necessary to improve mutual understanding of the various educational systems in the Community and to ensure continuous comparison of policies, experience and ideas in the Member States.*
>
> *[..]*
>
> *5. In order to give a European dimension to the experience of teachers and pupils in primary and secondary schools in the Community, Member States will promote and organize:*
>
> *— short study visits and exchanges for teachers, with special emphasis on student language teachers,*
>
> *— development of the national information and advisory services necessary to promote the mobility and interchange of pupils and teachers within the Community,*
>
> *[..]*
>
> *6. The following will be studied at Community level:*
>
> *— extension of the practice of recognizing periods of study abroad,*
>
> *— the possibility of enabling teachers to practice their profession for a time in a Community country other than their own,*
>
> *— the setting up of European or international-type establishments following specific curricula and using several teaching languages.*
>
> *[..]*

8. It is necessary to increase and improve the circulation of information between those responsible for education and those receiving it at all levels.

[..]

14. In order to promote the free movement and mobility of teaching staff, students and researchers, the following action will be undertaken at Community level:

— the arrangement of a discussion involving representatives of higher education institutions on the question of developing a common policy on the admission of students from other Member States to higher education institutions,

— the drawing up of a report in order to establish whether and to what extent the national schemes for scholarships, studentships and research and teaching fellowships should be extended to increase mobility in the Community and, where appropriate, the submission of suitable proposals,

— the drawing up of proposals designed to eliminate obstacles to the mobility of students and of university teaching and research staff.

[..]

16. To increase the possibilities for the academic recognition of diplomas and study periods and studies carried out, the following action will be undertaken at Community level:

— the drawing up of a report analysing the current situation with regard to the academic recognition of diplomas and containing proposals for the improvement of the situation and, if necessary, for the development of a network of agreements,

— the organization of consultations between those responsible for education policy and cooperation between higher education institutions to facilitate the recognition of periods of study and studies carried out.

As part of this action programme, the Committee of Education decides to create the network for information and documentation on European education Eurydice in January 1978. Eurydice officially started to work on 16 September 1980 (Valle, 2006, p. 61).

The main objectives of EURYDICE are:

1) *To promote studies and investigations in the Member States of their education policy and education systems in order to produce information for the EU decision-makers.*
2) *Diffuse this information in the European education sector. Eurydice uses a structure formed by national units in every State. The Central Unit, located in Brussels, depends from the Directorate General for Education and Culture (DG EAC).*

> *In 1990 the Council and the Ministers promoted the association of Eurydice with the Cedefop and the European network of National Recognition Information Centres, NARICs and encouraged continuing the relations of EURYDICE with the Organisation for Economic Co-operation and Development (OECD) and the Council of Europe.*
>
> [author´s translation from the original text in Spanish from (Valle, 2006, p. 63)].

The information of the different European education systems can now (2016) be found in the EURYPEDIA database, situated in the website of EURYDICE.

1984 was the foundation year of the Network of National Academic Recognition Information Centres, NARICs. This network is responsible for recognition activities of certificates and degrees across Europe. It collaborates with the Council of Europe, UNESCO and with the European Network for Quality Assurance in Higher Education- ENQA.

On 15 June 1987 the Council of the European Communities adopted the European Community Action Scheme for the Mobility of University Students, ERASMUS (87/327/EEC)

> *…in order to increase significantly such mobility in the Community and to promote greater cooperation between universities.*
>
> *2. In the context of the ERASMUS programme, the term 'university' shall be used to cover all types of post-secondary education and training establishments which offer, where appropriate within the framework of advanced training, qualifications or diplomas of that level, whatever such establishments may be called in the Member States.*

Article 4 mentions “The funds estimated as necessary for the execution of the ERASMUS programme during the period 1 July 1987 to 30 June 1990 amount to 85 million ECU.”

During 1988 and 1991 the Council ran the PETRA action programme for the vocational training of young people and their preparation for adult and working life.

This action programme intended to:

Article 1

[..] ensure, as called for by the European Council, that all young people in the Community who so wish receive one year's, or if possible two or more years', vocational training in addition to their full-time compulsory education.

[..]

(a) raise the standards and quality of vocational training within the Community and stimulate improvements in vocational training for young people and their preparation for adult and working life and for continuing training;

(b) diversify the provision of vocational training so as to offer choice for young people with different levels of ability, leading to recognized vocational training qualifications;

(c) enhance the capacity of vocational training systems to adapt to rapid economic, technological and social change;

(d) add a Community dimension to both the supply of, and demand for, vocational qualifications on the labour market, taking account of the need to promote comparability of these qualifications between the Member States of the Community.

Article 2

[..]

1. (a) strengthen, in cooperation with the social partners, links and cooperation at all levels between the vocational education, training and guidance systems and all sectors of the economy, both public and private, including, as appropriate, public, private and voluntary bodies and youth organizations;

(b) ensure that such activities contribute to:

- mobilizing available resources to encourage the personal and vocational development of young people,

- avoiding ad hoc and temporary structures, and

- the acquisition of recognized vocational qualifications;

2. encourage better use of opportunities flowing from a more diversified process of vocational guidance and support for those undergoing training, and from the coordination of such activities with a view to maintaining continuity;

3. provide improved knowledge of developments in the labour market, including the changing requirements for skills and qualifications in the different sectors, and of working conditions, particularly health and safety;

4. promote equal opportunities, in particular through measures taken to enable young women to participate on an equal basis in all vocational training programmes, and to facilitate their transition from training to employment;

[..]

Article 3

In order to achieve the objectives stated in Article 1 and to support and complement the activities of the Member States referred to in Article 2, the Commission shall make a contribution through the following measures, [..]:

1. (a) the launching of a European network of training initiatives linking projects from the different Member States of the kind set out in Article 2 (1) (a), which encourage the personal and vocational development of young people through cooperative or integrated vocational education, training and guidance measures;

(b) specific assistance for innovative information projects on the transition from school to vocational training and to working life, in particular those which involve young people in their planning, organization and implementation;

(c) specific assistance for projects to encourage the development of entrepreneurial skills, creativity and responsibility amongst young people, including those which involve young people in their planning, organization and implementation;

(d) exchange of vocational training specialists;

(e) technical assistance as necessary in the implementation of this programme;

2. (a) comparative research on vocational education and training issues, including surveys on the effectiveness of youth training programmes;

(b) review of the evolution of vocational qualifications;

(c) dialogue and reviews between policy-makers and the social partners on/of the implementation of this programme.

[..]

(COUNCIL OF THE EUROPEAN COMMUNITIES, 1987).

Between 1988 and 1991 the Community invested 40 million ECU. The programme reached around 75,000 youngsters, 10,000 trainers and 70 training institutions. The success of this programme was repeated with PETRA II (1992-1994), increasing the budget, and assigning 40 million ECUs (as for the whole PETRA I) to spend during the last year of PETRA II, 1994.

During this second period, quality, European dimension and ICT were included as aims of the programme (Valle, 2006, p. 63).

EUROTECNET was the 1990-1994 programme "to promote innovation in the fields of basic and also of continuing vocational training with a view to taking account of current and future technological changes and their impact on employment, work and necessary qualifications and skills" (COUNCIL OF THE EUROPEAN COMMUNITIES, 1989). The budget of 9.2 million ECU generated the distribution of 70,000 publications in the nine languages of the Member States, 64 workshops and seminars and 286 projects (Valle, 2006, p. 81).

FORCE was, during 1991 and 1994, the action Programme for the development of continuing vocational training in the European Community (COUNCIL OF THE EUROPEAN COMMUNITIES, 1990). During this programme, 83.4 million ECU financed 720 projects (Valle, 2006, p. 83).

During the final years of EUROTECNET and FORCE, the Council and the Commission decided they should join both programmes. LEONARDO, described in the next chapter, integrated in 1995 the actions of PETRA, EUROTECNET and FORCE.

The Maastricht Treaty on European Union establishes in Article 126 education as an aim for the Community action. VET actions are described in Article 127:

> *1. The Community shall implement a vocational training policy which shall support and supplement the action of the Member States, while fully respecting the responsibility of the Member States for the content and organization of vocational training.*
>
> *2. Community action shall aim to:*
>
> *- facilitate adaptation to industrial changes, in particular through vocational training and retraining;*

- improve initial and continuing vocational training in order to facilitate vocational integration and reintegration into the labour market;

- facilitate access to vocational training and encourage mobility of instructors and trainees and particularly young people;

- stimulate cooperation on training between educational or training establishments and firms;

- develop exchanges of information and experience on issues common to the training systems of the Member States.

3. The Community and the Member States shall foster cooperation with third countries and the competent international organizations in the sphere of vocational training.

4. The council, acting in accordance with the procedure referred to in Article 189c and after consulting the Economic and Social Committee, shall adopt measures to contribute to the achievement of the objectives referred to in this Article, excluding any harmonization of the laws and regulations of the Member States.'

The effect of the Maastricht Treaty (COUNCIL AND COMMISSION OF THE EUROPEAN COMMUNITIES, 1992) and the creation of the Single Market was the start of global unified programmes for education; SOCRATES for general education and LEONARDO, described in Chapter 5, for vocational education and training. Both programmes ran simultaneously and were active during 1995-1999, first period and 2000-2006, second period.

Another outcome of the Maastricht Treaty was the European Training Foundation, ETF. Functioning since 1994, it was created to help transition and developing countries through the reform of education, training and labour market systems in the context of the EU's external relations policy (ETF, 2016).

The Bologna Declaration of 19 June 1999, joint declaration of the European Ministers of Education, signalised the start of a new European area of higher education. The declaration mentions:

> *[..] Adoption of a system of* ***easily readable and comparable degrees****, also through the implementation of the Diploma Supplement, in order to promote European citizens´ employability and the international competitiveness of the European higher education system.*
>
> *[..] Establishment of a system of credits - such as in the ECTS system - as a proper means of promoting the most widespread student mobility. Credits could also be acquired in non-higher education contexts, including lifelong learning, provided they are recognised by receiving Universities concerned.*
>
> *Promotion of mobility by overcoming obstacles to the effective exercise of free movement with particular attention to:*
>
> • *for students, access to study and training opportunities and to related services*
>
> • *for teachers, researchers and administrative staff, recognition and valorisation of periods spent in a European context researching, teaching and training, without prejudicing their statutory rights. [..]*
>
> (EUROPEAN MINISTERS OF EDUCATION, 1999)

The Bologna Declaration has also had influence on VET as several countries offer studies that are part of the European area of higher education.

4.5 The knowledge-based economy, Lisbon Agenda (2000)

On 23-24 March 2000 in Lisbon the European Council held a special meeting to agree a new strategic goal for the Union in order to strengthen employment, economic reform and social cohesion as part of a knowledge-based economy during the coming decade. The presidency conclusions stated (Fontaine, 2000) "5. The Union has today set itself a new strategic goal for the next decade: to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion."

This strategic goal defines a new future for Europe, a goal that has drastically drifted from the initial aim of facilitating the movement of coal and steel and free access to sources of production, defined in 1951 in the Treaty of Paris.

"The Copenhagen Declaration", convened in Copenhagen on 29 and 30 November 2002, by the European Ministers of Vocational Education and Training, and the European Commission, was focused on enhancing European cooperation in vocational education and training.

The main priorities expressed in this declaration are clearly biased by the Lisbon Agenda:

> *European dimension*
>
> *• Strengthening the European dimension in vocational education and training with the aim of improving closer cooperation in order to facilitate and promote mobility and the development of inter-institutional cooperation, partnerships and other transnational initiatives, all in order to raise the profile of the European education and training area in an international context so that Europe will be recognised as a world-wide reference for learners.*
>
> *Transparency, information and guidance*
>
> *• Increasing transparency in vocational education and training through the implementation and rationalization of information tools and networks, including the integration of existing instruments such as the European CV, certificate and*

> *diploma supplements, the Common European framework of reference for languages and the EUROPASS into one single framework.*
>
> *• Strengthening policies, systems and practices that support information, guidance and counselling in the Member States, at all levels of education, training and employment, particularly on issues concerning access to learning, vocational education and training, and the transferability and recognition of competences and qualifications, in order to support occupational and geographical mobility of citizens in Europe.*
>
> *Recognition of competences and qualifications*
>
> *• Investigating how transparency, comparability, transferability and recognition of competences and/or qualifications, between different countries and at different levels, could be promoted by developing reference levels, common principles for certification, and common measures, including a credit transfer system for vocational education and training*
>
> *• Increasing support to the development of competences and qualifications at sectoral level, by reinforcing cooperation and co-ordination especially involving the social partners. Several initiatives on a Community, bilateral and multilateral basis, including those already identified in various sectors aiming at mutually recognised qualifications, illustrate this approach.*
>
> (EUROPEAN MINISTERS OF VOCATIONAL EDUCATION AND TRAINING AND THE EUROPEAN COMMISSION, 2002)

The Copenhagen Declaration targets on VET with similar objectives to those expressed by the Bologna Declaration in 1999 for the European area of Higher Education and is the origin of the so called "Copenhagen Process".

> *The Copenhagen Process during the period 2002-2010, has been a work method integrated in the Lisbon strategy that has efficiently contributed to link the national and European policies in VET and to develop a global strategy in the EU in this area. Besides, due to the participation of the candidate countries, the process has supported the enlargement of the European Union (from 15 to 25 Member States in 2004 and from 25 to 27 in 2007).*
>
> [author´s translation based on the text in Spanish by (Psifidou, 2014, p. 358).

The Maastricht Communiqué from 2004 develops the priorities of the Copenhagen Process and points out:

> *The necessary reforms and investment should be focused particularly on:*

> *- the image and attractiveness of the vocational route for employers and individuals, in order to increase participation in VET.*
>
> *- achieving high levels of quality and innovation in VET systems in order to benefit all learners and make European VET globally competitive.*
>
> *- linking VET with the labour market requirements of the knowledge economy for a highly skilled workforce, and especially, due to the strong impact of demographic change, the upgrading and competence development of older workers.*
>
> *- the needs of low-skilled (about 80 million persons aged between 25-64 years in the EU) and disadvantaged groups for the purpose of achieving social cohesion and increasing labour market participation.*
>
> (MINISTERS RESPONSIBLE FOR VOCATIONAL EDUCATION AND TRAINING OF 32 EUROPEAN COUNTRIES, THE EUROPEAN SOCIAL PARTNERS AND THE EUROPEAN COMMISSION, 2004)

Also during 2004 the Europass was created. Decision No 2241/2004/EC "establishes a single Community framework for achieving the transparency of qualifications and competences by means of the creation of a personal, coordinated portfolio of documents, to be known as 'Europass', which citizens can use on a voluntary basis to better communicate and present their qualifications and competences throughout Europe".

The Europass documents are:

> *Article 5 Europass-CV. The Europass-CV shall provide citizens with the opportunity to present in a clear and comprehensive way information on all their qualifications and competences. [..]*
>
> *Article 6 Europass-Mobility. The Europass-Mobility shall record periods of learning attended by its holders in countries other than their own. [..]*
>
> *Article 7 Europass-Diploma Supplement. The Europass-Diploma Supplement shall provide information on its holder's educational achievements at higher education level. [..]*
>
> *Article 8 Europass-Language Portfolio. The Europass-Language Portfolio shall provide citizens with the opportunity to present their language skills. [..]*
>
> *Article 9 Europass-Certificate Supplement. The Europass-Certificate Supplement shall describe the competences and qualifications corresponding to a vocational training certificate. [..]*
>
> (EUROPEAN PARLIAMENT AND THE COUNCIL, 2004)

The European Parliament and the Council passed on 7 September 2005 the Directive 2005/36/EC on the recognition of professional qualifications, mainly in the area of medicine and engineering. This Directive "establishes rules according to which a Member State which makes access to or pursuit of a regulated profession in its territory contingent upon possession of specific professional qualifications (..) shall recognise professional qualifications obtained in one or more other Member States (..) and which allow the holder of the said qualifications to pursue the same profession there, for access to and pursuit of that profession" (EUROPEAN PARLIAMENT AND THE COUNCIL, 2005).

In 2008 the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions produced the Communication from the - New Skills for New Jobs - Anticipating and matching labour market and skills needs {SEC(2008) 3058} "to enhance human capital and employability by upgrading skills. But upgrading skills is not enough: ensuring a better match between the supply of skills and labour market demand is just as necessary" (COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS, 2008).

As described in section 5.1 the Recommendation on the European Qualifications Framework, EQF, for lifelong learning was adopted by the European Parliament and the Council (EUROPEAN PARLIAMENT, 2008) on 23 April 2008. An EQF Advisory Group (AG) was created and National Coordination Points (NCPs) were set up in Member States to implement the EQF.

On 18 June 2009 the European Parliament and the Council produced the Recommendation on the establishment of a European Quality Assurance Reference Framework for Vocational

Education and Training. This document establishes the EQAVET framework, as described in section 5.3 (EUROPEAN PARLIAMENT AND OF THE COUNCIL, 2009a).

The same day, the European Parliament and the Council also set the Recommendation to create a European Credit System for Vocational Education and Training, ECVET, that intends "to facilitate the transfer, recognition and accumulation of assessed learning outcomes of individuals who are aiming to achieve a qualification." (EUROPEAN PARLIAMENT AND THE COUNCIL, 2009b). ECVET covers the Basic and Intermediate VET, ECTS covers Higher Education VET studies and together they cover the full range of VET qualifications. More information can be found in section 5.2.

The Helsinki Communiqué of 5 December 2006 and the Bordeaux Communiqué of 26 November 2008 reviewed the priorities and strategies of the Copenhagen process and in 2010 the Bruges Communiqué, taking into account the results of Copenhagen Process, provided a global vision for vocational education and training for the decade 2011-2020:

> *By 2020, European VET systems should be more attractive, relevant, career-oriented, innovative, accessible and flexible than in 2010, and should contribute to excellence and equity in lifelong learning by providing:*
>
> *- Attractive and inclusive VET with highly qualified teachers and trainers, innovative learning methods, high-quality infrastructure and facilities, a high labour market relevance, and pathways to further education and training;*
>
> *- High quality initial VET (I-VET) which learners, parents and society at large may regard as an appealing option, of the same value as general education. I-VET should equip learners with both key competences and specific vocational skills;*
>
> *- Easily accessible and career-oriented continuing VET (C-VET) for employees, employers, independent entrepreneurs and unemployed people, which facilitates both competence development and career changes;*
>
> *- Flexible systems of VET, based on a learning outcomes approach, which support flexible learning pathways, which allow permeability between the different education and training subsystems (school education, VET, higher education, adult education) and which cater for the validation of non-formal and informal learning, including competences acquired in the work place;*

- A European education and training area, with transparent qualifications systems which enable the transfer and accumulation of learning outcomes, as well as the recognition of qualifications and competences, and which facilitate transnational mobility;

- Substantially increased opportunities for transnational mobility of VET students and VET professionals;

- Easily accessible and high-quality lifelong information, guidance and counselling services, which form a coherent network and which enable European citizens to take sound decisions and to manage their learning and professional careers beyond traditional gender profiles.

(EUROPEAN MINISTERS FOR VOCATIONAL EDUCATION AND TRAINING, THE EUROPEAN SOCIAL PARTNERS AND THE EUROPEAN COMMISSION, 2010)

4.6 Europe 2020 Strategy

EU policy during the present decade, 2011-2020, is marked by the 2008 financial crisis and the aim to develop the knowledge-based economy defined in the Lisbon Agenda. Education focuses on key competences that include 'traditional' skills such as communication in one's mother tongue, foreign languages, digital skills, literacy, and basic skills in maths and science, as well as horizontal skills such as learning to learn, social and civic responsibility, initiative and entrepreneurship, cultural awareness, and creativity. The Communication "A strategy for smart, sustainable and inclusive growth" describes the Europe 2020 Strategy:

> *Europe faces a moment of transformation. The crisis has wiped out years of economic and social progress and exposed structural weaknesses in Europe's economy. In the meantime, the world is moving fast and long-term challenges – globalisation, pressure on resources, ageing – intensify. The EU must now take charge of its future.*
>
> *Europe can succeed if it acts collectively, as a Union. We need a strategy to help us come out stronger from the crisis and turn the EU into a smart, sustainable and inclusive economy delivering high levels of employment, productivity and social cohesion. Europe 2020 sets out a vision of Europe's social market economy for the 21st century.*
>
> *Europe 2020 puts forward three mutually reinforcing priorities:*
>
> *– Smart growth: developing an economy based on knowledge and innovation.*
>
> *– Sustainable growth: promoting a more resource efficient, greener and more competitive economy.*
>
> *– Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion.*
>
> *The EU needs to define where it wants to be by 2020. To this end, the Commission proposes the following EU headline targets:*
>
> *– 75 % of the population aged 20-64 should be employed.*
>
> *– 3% of the EU's GDP should be invested in R&D.*
>
> *– The "20/20/20" climate/energy targets should be met (including an increase to 30% of emissions reduction if the conditions are right).*

> *– The share of early school leavers should be under 10% and at least 40% of the younger generation should have a tertiary degree.*
>
> *– 20 million less people should be at risk of poverty.*
>
> *[..]*
>
> *The Commission is putting forward seven flagship initiatives to catalyse progress under each priority theme:*
>
> *– "Innovation Union" to improve framework conditions and access to finance for research and innovation so as to ensure that innovative ideas can be turned into products and services that create growth and jobs.*
>
> *– "Youth on the move" to enhance the performance of education systems and to facilitate the entry of young people to the labour market.*
>
> *– "A digital agenda for Europe" to speed up the roll-out of high-speed internet and reap the benefits of a digital single market for households and firms.*
>
> *– "Resource efficient Europe" to help decouple economic growth from the use of resources, support the shift towards a low carbon economy, increase the use of renewable energy sources, modernise our transport sector and promote energy efficiency.*
>
> *– "An industrial policy for the globalisation era" to improve the business environment, notably for SMEs, and to support the development of a strong and sustainable industrial base able to compete globally.*
>
> *– "An agenda for new skills and jobs" to modernise labour markets and empower people by developing their skills throughout the lifecycle with a view to increase labour participation and better match labour supply and demand, including through labour mobility.*
>
> *– "European platform against poverty" to ensure social and territorial cohesion such that the benefits of growth and jobs are widely shared and people experiencing poverty and social exclusion are enabled to live in dignity and take an active part in society.*
>
> (EUROPEAN COMMISSION, 2010)

Vocational Education and Training is going to play a key role in achieving results during the present decade: In all of the seven initiatives: training of youth, retraining of adults and development of new skills for future jobs, VET is the engine that enables the transformations. The Copenhagen Process forms an integral part of the “Education and Training 2020”, ET2020 strategic framework. The following actions focus on VET actions in the EU 2020 framework.

On 23 November 2010 the Commission communicated to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions the "Agenda for new skills and jobs: A European contribution towards full employment" that will help reach the employment target for 2020: 75% of the working-age population (20-64 years) in work, and focuses on four key priorities:

> *- First, better functioning labour markets [..].*
>
> *- Second, a more skilled workforce, capable of contributing and adjusting to technological change with new patterns of work organisation. This is a considerable challenge, given the rapidly-changing skills needed, and the persistent skills mismatches in the EU labour market. Investment in education and training systems, anticipation of skills needs, matching and guidance services are the fundamentals to raise productivity, competitiveness, economic growth and ultimately employment. The EU is committed to improving education levels by reducing school drop-outs to 10 % or less, and by increasing completion of tertiary or equivalent education to at least 40 % in 2020. The potential of intra-EU mobility and of third-country migrant inflows is not fully utilised and insufficiently targeted to meet labour market needs, despite the substantial contribution of migrants to employment and growth.*
>
> *- Third, better job quality and working conditions [..].*
>
> *- Fourth, stronger policies to promote job creation and demand for labour [..].*
>
> (EUROPEAN COMMISSION, 2010)

This Agenda is a continuation of the 2008 "New Skills for New Jobs" initiative. It fosters the creation of European Sector Skills Councils designed to anticipate the need for skills in specific sectors more effectively and achieve a better match between skills and labour market needs.

> *These councils aim mainly to:*
>
> - *provide more and better information about the skills situation in different sectors.*
> - *help develop skills governance in each sector and national skills policies by encouraging:*

- *national organisations to cater more effectively to the needs of the various sectors*
- *organisations active in the same field to learn from each other*
- *all organisations concerned to share information and experience.*

Councils have already been set up in 2 sectors (2016): Textile, clothing & leather and Commerce (retail & wholesale). 14 sectors have benefited from Commission funding for feasibility studies on setting up European skills councils: Nursing, Construction, Steel, Gas, Automotive, Chemicals, Fishery, Furniture, Shipbuilding, Audiovisual & live performance, Agriculture, Electricity, Sports & leisure, Dairy

(EUROPEAN COMMISSION, 2016)

In 2011 the Single Market Act proposed twelve levers to boost growth and strengthen confidence, for a future "Working together to create new growth". The levers were:

1. Access to finance for SMEs
2. Mobility for citizens
3. Intellectual property rights
4. Consumer empowerment
5. Services
6. Networks
7. The digital single market
8. Social entrepreneurship
9. Taxation
10. Social cohesion
11. Business environment
12. Public procurement

(EUROPEAN PARLIAMENT, THE COUNCIL, THE ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS, 2011).

Single Market Act I develops the Key action “Revise system for the recognition of professional qualifications” that includes the creation of the European Skills Passport.

Single Market Act II, 3 October 2012, develops the aims of its predecessor and, among others, in its Key action 5 urges to "Develop the EURES portal into a true European job placement and recruitment tool."

European Skills/Competences, qualifications and Occupations (ESCO) described in (EUROPEAN COMMISSION, 2012) is a new classification system under development by the European Commission together with stakeholders. ESCO will be multilingual, it will focus on skills and it will be published in an open format to be used by third parties' software. This will make it a valuable building block for online job portals, career guidance tools and databases of learning opportunities. These improvements should lead to very tangible benefits for jobseekers, people seeking career changes, learners and employers.

In 2013, the European Alliance for Apprenticeships is set "to improve the quality and supply of apprenticeships across the EU and to change mind-sets towards apprenticeship-type learning through a broad partnership bringing together key stakeholders from the employment and education sectors" as mentioned in the Declaration of the European Social Partners, the European Commission and the Lithuanian Presidency of the Council of the European Union,

In this Declaration the partners agree to:

> *1. Consider our common commitment and mutual trust as a precondition for the launch of the European Alliance for Apprenticeships.*
>
> *2. Contribute to the access to, supply, quality and attractiveness of apprenticeships across the EU by encouraging the setting up, reviving or modernising of apprenticeship schemes that follow the following principles:*
>
> *a. effective partnerships between education and training institutions and enterprises, and the recognition of their respective roles;*
>
> *b. involvement of social partners, and, as appropriate, intermediary bodies such as chambers of commerce, industry and crafts, professional organisations, sectoral organisations in the governance of apprenticeship systems;*
>
> *c. high quality of the qualifications and learning process;*

d. integration of apprenticeship schemes into national/regional education and training systems and a clear regulatory framework, clarifying the responsibilities, rights and obligations of each party involved, in the context of national practices, laws and collective agreements.

3. Contribute to changing mind-sets towards apprenticeship-type learning by promoting the benefits of apprenticeship systems.

(EUROPEAN SOCIAL PARTNERS, THE EUROPEAN COMMISSION AND THE LITHUANIAN PRESIDENCY OF THE COUNCIL OF THE EUROPEAN UNION, 2013)

4.7 Summary: From coal to knowledge

We have just read how Europe has evolved since 1950. Just after World War II the Treaty of Paris focused on the economy of coal and steel, setting guidelines to move from the primary sector economy towards a manufacturing secondary sector economy as a way of providing wealth and social stability to citizens.

During these decades we have seen how the EEC first and the EU later have been changing these aims and the efforts are nowadays placed on attaining a knowledge-based future, based on research and information technology. A future that will be reached thanks to the changes in European education in a wide sense and in vocational education and training specifically.

Until the mid-70s, the regulations passed by the European institutions mentioned the importance of VET as a catalyser to integrate low skilled citizens into the job market, but it was not until the creation of CEDEFOP in 1975 when actual effects could be noticed. This second period lasted until the establishment of the Lisbon Agenda and was characterised by the creation of organisations like the Committee of Education, EURYDICE and its European education systems database and the Network of National Academic Recognition Information Centres (NARICs). During this period there were already tangible activities that focused on improving VET from a transnational point of view; PETRA, EUROTECNET and FORCE were examples of these type of programmes.

The Lisbon Agenda signalised the start of the commitment of the EU to the knowledge-based economy and from that moment actual changes have been seen that have had a direct effect on professional training.

The Bologna Process changed the European Area of Higher Education and the on-going Copenhagen Process is on its way to creating a global European qualifications training framework: Directive 2005/36/EC recognises professional qualifications and EQF, EQAVET,

ECVET are actions that are already having a direct effect on national policies of the Member States, as mentioned in the next chapter.

The Europe 2020 strategy aims to improve the social situation of the citizens using education and professional training as the tools to achieve a knowledge-based economy.

Leonardo, the Lifelong Learning Programme and Eramus+ have been the actions aimed at improving VET at a European level during these last years. In the following chapter we will discover how and why they finance mobilities of students, staff and teachers.

5. European VET frameworks

Five European frameworks are defining the future of VET: The European Qualifications Framework - EQF, the European credit system for vocational education and training – ECVET, the European credits transfer system - ECTS, the European quality assurance in vocational education and training – EQAVET and the Erasmus+ mobility programme.

These guidelines are transforming top-down how national VET systems are evolving and making them slowly find supranational connection and transfer points.

5.1 European Qualifications Framework

The Recommendation on the European Qualifications Framework, EQF, for lifelong learning was adopted by the European Parliament and the Council (EUROPEAN PARLIAMENT, 2008) on 23 April 2008. An EQF Advisory Group (AG) was created and National Coordination Points (NCPs) were set up in Member States to implement the EQF.

> *The EQF is a common European reference system which will link different countries' national qualifications systems and frameworks together. In practice, it will function as a translation device making qualifications more readable. This will help learners and workers wishing to move between countries or change jobs or move between educational institutions at home.*
>
> (EDUCATION AND CULTURE DG, 2010, p. 4)

Each of the European nations is developing a National Qualifications Framework, NQF, that will have different levels that should match with the EQF. Once the national stakeholders have set up their NQFs and have established relations with the EQF it will be easier to compare individual qualifications from different countries, and their education and training systems.

EQF is meant to promote lifelong learning and includes general and adult education, vocational education and training as well as higher education. The eight levels include all the qualifications that can be achieved after attending compulsory education.

The EQF focuses on learning outcomes. This allows a person to qualify using a broad range of learning paths. The person can achieve the different levels with a variety of education and career paths, attending learning institutions, with work experience and/or as an apprentice, for example.

Shifting the focus to learning outcomes brings the needs (knowledge, skills and competences) of the labour market closer to the education and training system. It simplifies the

validation of non-formal and informal learning and enables the transfer and use of qualifications across different countries and education and training systems.

The education system across Europe is so diverse (different study paths and lengths, diverse training institutions and methods, …) that trying to match and compare the types of education would be unrealistic.

EQF also sets common principles for quality assurance in higher education and vocational education and training that should be taken into account in the National Qualifications Frameworks, NQFs.

> *NQFs have primarily (in 34 out of 38 countries) been designed as comprehensive and address all levels and types of qualifications (VET, higher education and general education). The remaining four countries, the Czech Republic, France, Italy and Switzerland, have developed frameworks with limited scope or chosen to develop and implement separate frameworks for vocational and higher education. Some countries, such as Germany and Austria, have agreed on comprehensive NQFs but are taking a step-by-step approach where some qualifications (for example school leaving certificates at upper secondary level) have still to be included.*
>
> (CEDEFOP, 2014 EQF a)

In the past, a recommendation (EUROPEAN COMMISSION, 2013 EQF, p. 3) set two target dates:

> • *2010: Member States should relate their national qualifications systems to the EQF, in particular by referencing their qualifications levels to the EQF and, where necessary, developing national qualifications frameworks (NQFs);*
>
> • *2012: all new qualification certificates, diplomas and 'Europass' documents issued by the competent authorities must contain a clear reference to the relevant EQF level.*

Each of the 38 countries implementing their NQF is currently at a different stage of implementation.

TABLE 9 EQF DESCRIPTORS DEFINING LEVELS

Each of the 8 levels is defined by a set of descriptors indicating the learning outcomes relevant to qualifications at that level in any system of qualifications. (EUROPEAN PARLIAMENT, 2008, Annex II)

	Knowledge In the context of EQF, knowledge is described as theoretical and/or factual	**Skills** In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments)	**Competence** In the context of EQF, competence is described in terms of responsibility and autonomy
Level 1 **The learning outcomes relevant to Level 1 are**	basic general knowledge	basic skills required to carry out simple tasks	work or study under direct supervision in a structured context
Level 2 **The learning outcomes relevant to Level 2 are**	basic factual knowledge of a field of work or study	basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	work or study under supervision with some autonomy
Level 3 **The learning outcomes relevant to Level 3 are**	knowledge of facts, principles, processes and general concepts, in a field of work or study	a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	take responsibility for completion of tasks in work or study adapt one´s own behaviour to circumstances in solving problems
Level 4 **The learning outcomes relevant to Level 4 are**	factual and theoretical knowledge in broad contexts within a field of work or study	a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change, supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities

Level 5 (*) **The learning outcomes relevant to Level 5 are**	comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	exercise management and supervision in contexts of work or study activities where there is unpredictable change review and develop performance of self and others
Level 6 (**) **The learning outcomes relevant to Level 6 are**	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts take responsibility for managing professional development of individuals and groups
Level 7 (***) **The learning outcomes relevant to Level 7 are**	highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research critical awareness of knowledge issues in a field and at the interface between different fields	specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches, take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
Level 8 (****) **The learning outcomes relevant to Level 8 are**	knowledge at the most advanced frontier of a field of work or study and at the interface between fields	the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

Compatibility with the Framework for Qualifications of the European Higher Education Area

The Framework for Qualifications of the European Higher Education Area provides descriptors for cycles.

Each cycle descriptor offers a generic statement of typical expectations of achievements and abilities associated with qualifications that represent the end of that cycle.

(*) The descriptor for the higher education short cycle (within or linked to the first cycle), developed by the Joint Quality Initiative as part of the Bologna process, corresponds to the learning outcomes for EQF level 5.

(**) The descriptor for the first cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 6.

(***) The descriptor for the second cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 7.

(****) The descriptor for the third cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 8.

5.2 European Credit Systems, ECTS and ECVET

Credits are like bricks that form professional studies. Once these bricks are identified in each country the compatibility, comparability and complementarity of credit systems used in VET will be possible. As mentioned by the Director of Cedefop, Aviana Bulgarelli, "Credit systems and qualifications frameworks are interwoven" (CEDEFOP, 2010, p. 1).

The different countries are taking different approaches to EQF and this situation has an impact on the development of credit systems in each nation.

In vocational education and training we can identify two types of credits:

- *ECTS, European Credit Transfer and accumulation System*
- *ECVET, European Credit system for Vocational Education and Training.*

ECTS is being implemented in Higher Education Studies, EQF 5 to 8, such as university and VET technical high schools.

ECVET could validate professional learning outcomes at EQF levels 1 to 4.

In both cases, these "credits are based on the workload students need in order to achieve expected learning outcomes. Learning outcomes describe what a learner is expected to know, understand and be able to do after successful completion of a process of learning. They relate to level descriptors in national and European qualifications frameworks" (OFFICE FOR OFFICIAL PUBLICATIONS OF THE EUROPEAN COMMUNITIES, 2009, p. 11).

The time students need to fulfil all the learning activities and achieve the expected learning outcomes (including not only lectures, but also self-study, projects, exams, ...) indicates the workload.

A fulltime academic year and its learning outcomes represents a workload of 60 ECVET/ECTS credits.

Once the learning activities are completed and the learning outcomes of a complete programme of study or one of its educational components are successfully assessed, the credits are awarded to the student. Credits can be accumulated to obtain a qualification. Credits may also be transferred to another study programme from the same or different institutions.

In the case of recognising periods of study done abroad, the partner institutions should agree in advance the recognition of the credits.

Learning outcomes that have been achieved under different conditions (formal, nonformal, informal education), may be awarded credits after a successful validation.

ECTS is now part of the education systems of most of the countries belonging to the Bologna process.

ECVET is still at an early stage in most of the countries, as these credits are trying to be linked to the NQFs that are still under development.

As mentioned in the Recommendation of the European Parliament and of the Council of 18 June 2009 (EUROPEAN PARLIAMENT AND THE COUNCIL, 2009b):

> *The purpose of this Recommendation is to create a European Credit System for Vocational Education and Training ('ECVET') intended to facilitate the transfer, recognition and accumulation of assessed learning outcomes of individuals who are aiming to achieve a qualification. This will improve the general understanding of citizens' learning outcomes and their transparency, transnational mobility and portability across and, where appropriate, within Member States in a borderless lifelong learning area, and will also improve the mobility and portability of qualifications at national level between various sectors of the economy and within the labour market; furthermore, it will contribute to the development and expansion of European cooperation in education and training.*

To promote and analyse ECVET implementation the EU Commission has proposed establishing communities of practice to share best practices.

When different institutions agree on using credits´ recognition they should agree on a "Memorandum of Understanding". When a student from one of these institutions plans to study at one of the other institutions he should prepare in advance the "Learning Agreement" to establish which are the learning outcomes and credits that will be recognised during the process.

The "Transcript of Records" lists the awarded credits and the "Diploma Supplement" will describe the final qualifications in terms that can be recognised by institutions and bodies from other countries.

5.3 EQAVET

The recommendation on the establishment of a European Quality Assurance Reference Framework for Vocational Education and Training establishes a European Quality Assurance Reference Framework as a reference instrument to help Member States to promote and monitor continuous improvement of their VET systems based on common European references. “The framework should contribute to quality improvement in VET and to increased transparency of, and consistency in, VET policy developments between Member States, thereby promoting mutual trust, mobility of workers and learners, and lifelong learning” (EUROPEAN PARLIAMENT AND OF THE COUNCIL, 2009a).

The EQAVET framework includes an improvement cycle of planning, implementation, evaluation/assessment and review/revision of VET, supported by common quality criteria, indicative descriptors and indicators and focusses on quality assurance. The Member States are in charge of defining the monitoring processes, including a combination of internal and external evaluation mechanisms, in order to identify the strength of systems, processes and procedures and areas for improvement. They should also include the use of measuring tools to monitor the effectiveness.

The framework is meant to be applied at the VET-system, VET-provider and qualification-awarding levels. It provides a systemic approach to quality, covering and interrelating the relevant levels and actors. “The framework should give strong emphasis to monitoring and improving quality by combining internal and external evaluation, review and processes for improvement, supported by measurement and qualitative analysis. The framework should be a basis for further development through cooperation at European, national, regional and local levels” (EUROPEAN PARLIAMENT AND OF THE COUNCIL, 2009a).

TABLE 10 THE EUROPEAN QUALITY ASSURANCE REFERENCE FRAMEWORK

Quality Criteria	Indicative descriptors at VET-system level	Indicative descriptors at VET-provider level
Planning reflects a strategic vision shared by the relevant stakeholders and includes explicit goals/objectives, actions and indicators	Goals/objectives of VET are described for the medium and long terms, and linked to European goals The relevant stakeholders participate in setting VET goals and objectives at the different levels Targets are established and monitored through specific indicators (success criteria) Mechanisms and procedures have been established to identify training needs An information policy has been devised to ensure optimum disclosure of quality results/outcomes subject to national/ regional data protection requirements Standards and guidelines for recognition, validation and certification of competences of individuals have been defined	European, national and regional VET policy goals/objectives are reflected in the local targets set by the VET providers Explicit goals/objectives and targets are set and monitored Ongoing consultation with relevant stakeholders takes place to identify specific local/ individual needs Responsibilities in quality management and development have been explicitly allocated There is an early involvement of staff in planning, including with regard to quality development Providers plan cooperative initiatives with other VET providers The relevant stakeholders participate in the process of analysing local needs VET providers have an explicit and transparent quality assurance system in place
Implementation plans are devised in consultation with stakeholders and include explicit principles	Implementation plans are established in cooperation with social partners, VET providers and other relevant stakeholders at the different levels Implementation plans include consideration of the resources required, the capacity of the users and the tools and guidelines needed for support Guidelines and standards have been devised for implementation at different levels Implementation plans include specific support towards the training of teachers and trainers VET providers' responsibilities in the implementation process are explicitly described and made transparent A national and/or regional quality assurance framework has been devised and includes guidelines and quality standards at VET provider level to promote continuous improvement and self-regulation	Resources are appropriately internally aligned/assigned with a view to achieving the targets set in the implementation plans Relevant and inclusive partnerships are explicitly supported to implement the actions planned The strategic plan for staff competence development specifies the need for training for teachers and trainers Staff undertake regular training and develop cooperation with relevant external stakeholders to support capacity building and quality improvement, and to enhance performance

Evaluation of outcomes and processes is regularly carried out and supported by measurement	A methodology for evaluation has been devised, covering internal and external evaluation Stakeholder involvement in the monitoring and evaluation process is agreed and clearly described The national/regional standards and processes for improving and assuring quality are relevant and proportionate to the needs of the sector Systems are subject to self-evaluation, internal and external review, as appropriate Early warning systems are implemented Performance indicators are applied Relevant, regular and coherent data collection takes place, in order to measure success and identify areas for improvement. Appropriate data collection methodologies have been devised, e.g. questionnaires and indicators/metrics	Self-assessment/self-evaluation is periodically carried out under national and regional regulations/ frameworks or at the initiative of VET providers Evaluation and review covers processes and results/outcomes of education including the assessment of learner satisfaction as well as staff performance and satisfaction Evaluation and review includes adequate and effective mechanisms to involve internal and external stakeholders Early warning systems are implemented
Review	Procedures, mechanisms and instruments for undertaking reviews are defined at all levels Processes are regularly reviewed and action plans for change devised. Systems are adjusted accordingly Information on the outcomes of evaluation is made publicly available	Learners' feedback is gathered on their individual learning experience and on the learning and teaching environment. Together with teachers' feedback this is used to inform further actions Information on the outcomes of the review is widely and publicly available Procedures on feedback and review are part of a strategic learning process in the organisation Results/outcomes of the evaluation process are discussed with relevant stakeholders and appropriate action plans are put in place

THE EUROPEAN QUALITY ASSURANCE REFERENCE FRAMEWORK: QUALITY CRITERIA AND INDICATIVE DESCRIPTORS

Source: (EUROPEAN PARLIAMENT AND OF THE COUNCIL, 2009a, p. ANNEX I).

TABLE 11 QUALITY INDICATORS FOR ASSESSING QUALITY IN VET

Indicator	Type of Indicator	Purpose of the Policy
Overarching Indicators for Quality Assurance		
No 1 Relevance of quality assurance systems for VET providers: (a) share of VET providers applying internal quality assurance systems defined by law/at own initiative (b) share of accredited VET providers	Context/Input indicator	Promote a quality improvement culture at VET-provider level Increase the transparency of quality of training Improve mutual trust on training provision
No 2 Investment in training of teachers and trainers: (a) share of teachers and trainers participating in further training (b) amount of funds invested	Input/Process indicator	Promote ownership of teachers and trainers in the process of quality development in VET Improve the responsiveness of VET to changing demands of labour market Increase individual learning capacity building Improve learners' achievement
Indicators supporting quality objectives for VET policies		
No 3 Participation rate in VET programmes: Number of participants in VET programmes (1), according to the type of programme and the individual criteria (2)	Input/Process/ Output indicator	Obtain basic information at VET-system and VET-provider levels on the attractiveness of VET Target support to increase access to VET, including for disadvantaged groups
No 4 Completion rate in VET programmes: Number of persons having successfully completed/abandoned VET programmes, according to the type of programme and the individual criteria	Process/Output/ Outcome indicator	Obtain basic information on educational achievements and the quality of training processes Calculate drop-out rates compared to participation rate Support successful completion as one of the main objectives for quality in VET Support adapted training provision, including for disadvantaged groups

No 5 Placement rate in VET programmes: (a) destination of VET learners at a designated point in time after completion of training, according to the type of programme and the individual criteria (3) (b) share of employed learners at a designated point in time after completion of training, according to the type of programme and the individual criteria	Outcome indicator	Support employability Improve responsiveness of VET to the changing demands in the labour market Support adapted training provision, including for disadvantaged groups
No 6 Utilisation of acquired skills at the workplace: (a) information on occupation obtained by individuals after completion of training, according to type of training and individual criteria (b) satisfaction rate of individuals and employers with acquired skills/competences	Outcome indicator (mix of qualitative and quantitative data)	Increase employability Improve responsiveness of VET to changing demands in the labour market Support adapted training provision, including for disadvantaged groups
Context information		
No 7 Unemployment rate (4) according to individual criteria	Context indicator	Background information for policy decision-making at VET-system level
No 8 Prevalence of vulnerable groups: (a) percentage of participants in VET classified as disadvantaged groups (in a defined region or catchment area) according to age and gender (b) success rate of disadvantaged groups according to age and gender	Context indicator	Background information for policy decision-making at VET-system level Support access to VET for disadvantaged groups Support adapted training provision for disadvantaged groups
No 9 Mechanisms to identify training needs in the labour market: (a) information on mechanisms set up to identify changing demands at different levels (b) evidence of their effectiveness	Context/Input indicator (qualitative information)	Improve responsiveness of VET to changing demands in the labour market Support employability

No 10 Schemes used to promote better access to VET: (a) information on existing schemes at different levels (b) evidence of their effectiveness	Process indicator (qualitative information)	Promote access to VET, including for disadvantaged groups Support adapted training provision

(1) For IVT: a period of 6 weeks of training is needed before a learner is counted as a participant. For lifelong learning: percentage of population admitted to formal VET programmes.

(2) Besides basic information on gender and age, other social criteria might be applied, e.g. early school leavers, highest educational achievement, migrants, persons with disabilities, length of unemployment.

(3) For IVT: including information on the destination of learners who have dropped out.

(4) Definition according to ILO and OECD: individuals aged 15-74 without work, actively seeking employment and ready to start work.

A REFERENCE SET OF SELECTED QUALITY INDICATORS FOR ASSESSING QUALITY IN VET.

Source: (EUROPEAN PARLIAMENT AND OF THE COUNCIL, 2009a, p. ANNEX II).

5.4 Leonardo, LLP and Erasmus+

5.4.1 Integrating VET in European Education

The first LEONARDO DA VINCI programmes (1995-2003) integrated all the previous European programmes dealing with vocational education and training. The success of the format developed into the LIFELONG LEARNING programmes (LLP) that put together all the other actions dealing with education. LLP offered all the European education institutions and stakeholders a framework to finance transnational projects. Although LLP built a common workplace for European education, each of the various sub-programmes was developed under different conditions and their call procedures were not the same.

Erasmus+ is the last and current step in this evolution. The different LLP sub-programmes have evolved into a unique Erasmus+ framework where all the European education sectors share the same application and call procedures.

5.4.2 LEONARDO (1995-1999) and LEONARDO II (2000-2006)

The Council adopted in December 1994 the action programme LEONARDO DA VINCI for the implementation of a European Community vocational training policy (Decision 94/819/EC of 6 December 1994) and assigned a total budget of 620 million ECU to the programme (Valle, 2006, p. 220) for the period 1 January 1995 to 31 December 1999.

LEONARDO DA VINCI was implemented to integrate the previous Community action programmes in the vocational training field (COMETT, Eurotechnet, FORCE, PETRA, LINGUA) into a single programme (CORDIS, 1994).

The aims of the programme were to:

> *- Improve the quality and innovation capacity of Member States vocational training systems;*

- Develop the European dimension in vocational training and vocational guidance;

- Promote lifelong training;

- Give all young people in the Community the possibility of vocational training after compulsory education;

- Encourage specific vocational training measures for adults without adequate qualifications;

- Enhance the status of vocational education and training and promote the recognition of academic diplomas and vocational qualifications;

- Prepare young people for adult and working life, taking account of the requirements of society and technological change;

- Encourage specific vocational training measures for disadvantaged young people without adequate training;

- Support vocational training policies in such a way that all workers in the Community have access to continuing vocational training throughout their working life;

- Promote equality of opportunity as regards access for men and women to vocational training.

(CORDIS, 1994)

The Decision contains an annex mentioning four types of measures for the establishment of the programme:

- Support for the improvement of vocational training systems and arrangements in the Member States;

- Support for the improvement of vocational training measures, including university/industry cooperation, concerning undertakings and workers;

- Support for the development of language skills, knowledge and the dissemination of innovation in the field of vocational training;

- Support measures.

(CORDIS, 1994)

LEONARDO DA VINCI was officially launched in Tours, France on 2-3 March 1995, at the initiative of the French Presidency and with the support of the European Commission,

represented by Mrs. Edith Cresson, Commissioner responsible for research, education and training (CORDIS, 1995).

The four main objectives of the programme were:

- Improving the quality of vocational training in Europe:

The programme will support a series of transnational projects, i.e. involving participants from various Member States who have something to contribute to the quality of training. This may involve determining and setting up common training methods. Schools or vocational training centres in various Member States may, for example, get together with one or more companies to establish a joint apprenticeship scheme in a given trade and send their students on suitable placements in the partner companies.

Businesses in the same trade or branches of the same group may want to retrain their employees in new computer-assisted production technologies and organize distance training courses together, in partnership with the public authorities.

Similarly, LEONARDO DA VINCI will support training courses for instructors and projects designed to pinpoint qualification needs more accurately or to develop language-learning techniques using new information technology.

- Encouraging exchanges and placements:

LEONARDO DA VINCI will support placement and exchange programmes to enable various people - young people undergoing basic training, young university students - to do part of their training in a centre or company in another Member State and to help instructors and training specialists improve the quality of their work through exchanges. Exchanges to develop language learning will also have a high priority.

- Better understanding of vocational training:

LEONARDO DA VINCI will support surveys and analyses at Community level, data exchange and the dissemination of information on innovatory measures and on vocational training.

- Encouraging adaptation to the new information society:

Finally, as the acquisition of new information technologies is likely, within a few years, to revolutionize the way we live and work, this will be one of the main priorities of the programme.

(CORDIS, 1995)

The financing was allocated to projects that matched the objectives and priorities of the programme. Financing of inter-university exchanges were not eligible as they were part of the SOCRATES programme. The projects had to be transnational, i.e. each project involved at least two Member States or other participating countries (LEONARDO DA VINCI was open to the associate countries of Central and Eastern Europe and to Cyprus and Malta) (CORDIS, 1995).

LEONARDO DA VINCI fostered transfer of innovation projects involving different types of partners: businesses/public authorities/management and labour; training organizations/businesses/universities; local communities/schools, etc (CORDIS, 1995).

The budget of each project could vary, but they were all limited to ECU 100,000 per project per year or ECU 5,000 per person per placement programme (CORDIS, 1995).

The Council Decision 99/382 26 April 1999 establishes the continuation of the LEONARDO DA VINCI programme for the period 2000 to 2006 1999, assigning a budget of 1150 million ECU (Valle, 2006, p. 220)

5.4.3 Lifelong Learning Programme (2007-2013)

The Lifelong Learning Programme (LLP) was designed to enable European citizens, at any stage of their life, to take part in learning experiences, education and training across Europe. It ran from 2007-2013 with a budget of nearly €7 billion (EUROPEAN COMMISSION, 2013).

The LLP was divided in four main sub-programmes:

- *Comenius for schools*
- *Erasmus for higher education*
- *Leonardo da Vinci for vocational education and training*
- *Grundtvig for adult education*

The programme also included the "Jean Monnet" actions, designed to stimulate teaching, reflection, and debate on European integration.

The Leonardo da Vinci sub-programme funded practical projects in the field of vocational education and training. Initiatives ranged from those providing work-related training to individuals, to larger cooperation efforts (EUROPEAN COMMISSION, 2013).

Decision No 1720/2006/EC (amended by Decision No 1357/2008/EC) established the action programme in the field of lifelong learning. In Article 1 it mentions the objectives of the LLP:

> *1.[..]*
>
> *2. The general objective of the Lifelong Learning Programme is to contribute through lifelong learning to the development of the Community as an advanced knowledge-based society, with sustainable economic development, more and better jobs and greater social cohesion, while ensuring good protection of the environment for future generations. In particular, it aims to foster interchange, cooperation and mobility between education and training systems within the Community so that they become a world quality reference.*
>
> *3.(a) to contribute to the development of quality lifelong learning, and to promote high performance, innovation and a European dimension in systems and practices in the field;*
>
> *(b) to support the realisation of a European area for lifelong learning;*
>
> *(c) to help improve the quality, attractiveness and accessibility of the opportunities for lifelong learning available within Member States;*
>
> *(d) to reinforce the contribution of lifelong learning to social cohesion, active citizenship, intercultural dialogue, gender equality and personal fulfilment;*
>
> *(e) to help promote creativity, competitiveness, employability and the growth of an entrepreneurial spirit;*
>
> *(f) to contribute to increased participation in lifelong learning by people of all ages, including those with special needs and disadvantaged groups, regardless of their socio-economic background;*
>
> *(g) to promote language learning and linguistic diversity;*
>
> *(h) to support the development of innovative ICT-based content, services, pedagogies and practice for lifelong learning;*

> *(i) to reinforce the role of lifelong learning in creating a sense of European citizenship based on understanding and respect for human rights and democracy, and encouraging tolerance and respect for other peoples and cultures;*
>
> *(j) to promote cooperation in quality assurance in all sectors of education and training in Europe;*
>
> *(k) to encourage the best use of results, innovative products and processes and to exchange good practice in the fields covered by the Lifelong Learning Programme, in order to improve the quality of education and training.*
>
> (EUROPEAN PARLIAMENT AND THE COUNCIL, 2006)

Article 3 creates the sub-programmes:

> *1.(a) the Comenius programme, which shall address the teaching and learning needs of all those in pre-school and school education up to the level of the end of upper secondary education, and the institutions and organisations providing such education;*
>
> *(b) the Erasmus programme, which shall address the teaching and learning needs of all those in formal higher education and vocational education and training at tertiary level, whatever the length of their course or qualification may be and including doctoral studies, and the institutions and organisations providing or facilitating such education and training;*
>
> *(c) the Leonardo da Vinci programme, which shall address the teaching and learning needs of all those in vocational education and training, other than at tertiary level, as well as the institutions and organisations providing or facilitating such education and training;*
>
> *(d) the Grundtvig programme, which shall address the teaching and learning needs of those in all forms of adult education, as well as the institutions and organisations providing or facilitating such education.*
>
> (EUROPEAN PARLIAMENT AND THE COUNCIL, 2006)

There were different types of projects funded in the LLP Leonardo sub-programme:

- *Mobility projects:*

  The Leonardo da Vinci programme promoted transnational mobility by helping people gain a working or learning experience abroad. Pupils, apprentices and trainees could travel abroad for a period of work experience or training, while

teachers and other professionals working in VET could travel to share best practice and benefit from mutual learning. The programme targeted different groups through its three main mobility project areas: learners in Initial Vocational Training (IVT), People in the Labour Market (PLM) and VET professionals (VETPRO) (EUROPEAN COMMISSION, 2012, p. 7).

- *Transfer of Innovation (TOI) projects:*

  TOI projects built synergies between training institutions, public authorities, industry sectors and small and medium-sized enterprises (SMEs) from all over Europe. By bringing together different organisations from different countries they facilitated mutual inspiration, exploited existing experiences, concepts, good practices or innovations and opened a European perspective and policy orientation to VET institutions (EUROPEAN COMMISSION, 2012, p. 13).

- *Partnerships:*

  Partnerships were launched in 2008 to fill the gap between pure mobility projects and the larger-scale multilateral projects. Their aims were to share and transfer experience, good practice and innovation. Many organisations saw them as a first entry point for European cooperation. Partnership projects lasted two years and involved organisations from at least three countries (EUROPEAN COMMISSION, 2012, p. 16).

- *Development of Innovation (DOI), centralised action*

  Development of Innovation (DOI) projects sought to develop innovative solutions at a European level to improve the quality of VET systems. Lasting from one to three years, and with partners from at least three countries, DOI projects resulted in

the development of new course contents, methods or procedures (EUROPEAN COMMISSION, 2012, p. 18).

5.4.4 Erasmus+ (2014-2020)

Erasmus+ is the current European programme in charge of fostering the development of transnational programmes in the areas of education, training, sport and youth policies. Erasmus+ is focused on the adaptation to a fast changing world, tackling youth unemployment and preparing the workers for highly skilled jobs.

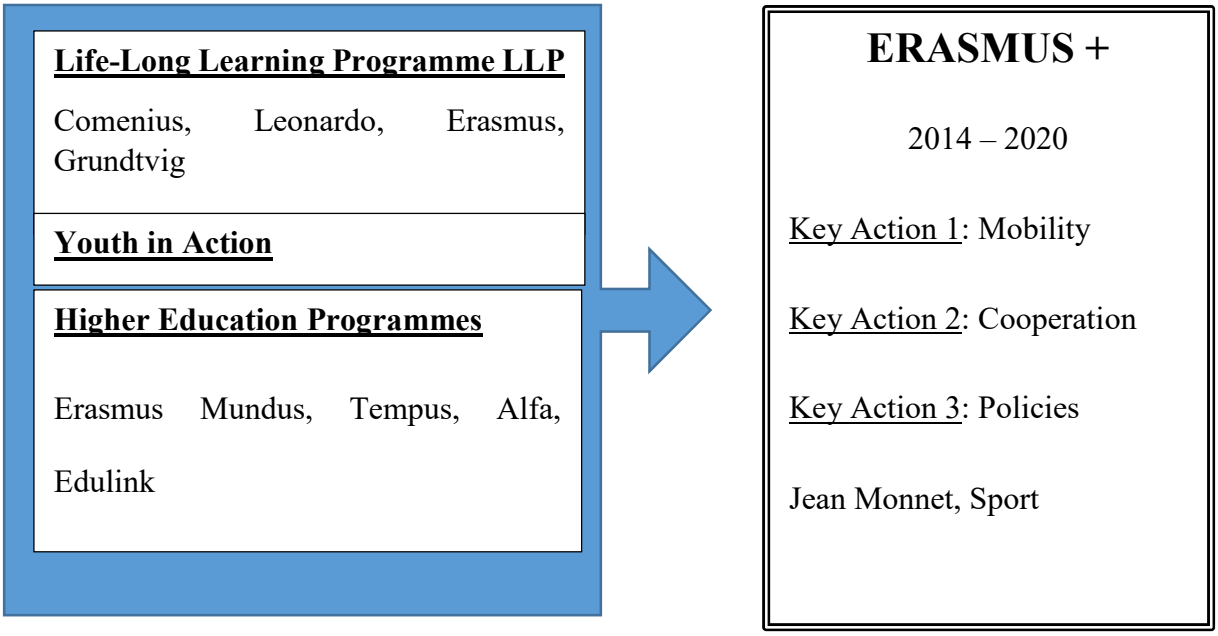
The European Horizon 2020 aims to (EUROPEAN COMMISSION, 2010):

- *Prepare 40% of the European population (30 – 34 years old) to hold a Higher Education qualification.*
- *Reduce early school-leaving to 10%*
- *Foster student mobility up to 20% in Higher Education and 6% in Initial Vocational Education and Training*

Erasmus+ intends to demonstrate that it is better to invest at a European rather than at national level and proposes to focus on the people, institutions and systems, creating transnational synergies.

As mentioned in the Erasmus+ Programme guide, financing is awarded to eligible institutions depending on the points each project receives for its relevance, quality of the project design, quality of the project team and its impact and dissemination. Individuals cannot apply directly for a grant (EUROPEAN COMMISSION, 2015).

FIGURE 3 ERASMUS+ INTEGRATION OF PREVIOUS EUROPEAN PROGRAMMES



Source: Compiled by the author with information from (EUROPEAN COMMISSION, DG EDUCATION AND CULTURE, 2013)

NOTE FROM THE AUTHOR:

Erasmus+ integrates former programmes like the Long Life Learning Programme, Youth in Action, and the different international Higher Education and Sport programmes.

Key Action 1 (KA1) integrates all the financing programmes that deal with the mobility in education. It includes mobility possibilities for teachers, students and staff dealing with primary, secondary, vocational, higher and adult education.

Vocational education and training mobilities of KA1 are the subject of the current study.

Key Action 2 (KA2) integrates all the financing programmes that deal with European cooperation in education. It fosters collaboration between any type of organisation dealing with education like schools, colleges, universities, NGOs, public institutions and private companies.

Key Action (KA3) offers national and transnational organisations a framework to create and modify European policies.

Jean Monnet aims to stimulate teaching, research and reflection in the field of European Union studies worldwide.

Sport focuses on creating collaborative partnerships and non-profit sport events at a European level.

Key Action 1 mobility projects

The Erasmus+ Programme Guide (EUROPEAN COMMISSION, 2015) establishes the aims of a mobility project:

> *Education, training and youth activities play a key role in providing people of all ages with the necessary means to participate actively in the labour market and in society at large. Projects under this Action promote transnational mobility activities targeting learners (students, trainees, apprentices, young people and volunteers), and staff (professors, teachers, trainers, youth workers, and people working in organisations active in the educationa, training and youth fields) and aiming to:*
>
> - *Support learners in the acquisition of competences (knowledge, skills and attitudes) with a view to improving their personal development and employability in the European labour market and beyond*
> - *Support the professional development of those who work in education, training and youth with a view to innovating and improving the quality of teaching, training and youth work across Europe;*
> - *enhance notably the participants´foreign languages competence;*
> - *raise participants´awareness and understanding of other cultures and countries, offering them the opportunity to build networks of international contacts, to actively participate in society and develop a sense of European citizenship and identity;*
> - *increase the capacities, attractiveness and international dimension of organisations active in the education, training and youth fields so that they are able to offer activities and programmes that better respond to the needs of individuals, within and outside Europe;*
> - *reinforce synergies and transitions between formal, non-formal education, vocational training, employment and entrepreneurship;*
> - *ensure a better recognition of competences gained through the learning periods abroad.*
>
> [..]"

The Erasmus+ Key Action 1 offers the VET sector two types of funding programmes. The information of this section is mentioned in the Erasmus+ Programme Guide (EUROPEAN COMMISSION, 2015):

- *KA102, mobility programmes for students, teachers and staff engaged in initial Vocational Education and Training.*
- *KA103, mobility programmes for students, teachers and staff engaged in Higher Education VET studies*

VET mobilities - KA102

KA102 projects are those dealing with mobilities of students, teachers and staff involved in initial vocational education and training. These are the key projects investigated in the current research.

Mobility projects can be presented at the beginning of each year by individual institutions or by a consortium of organisations working to offer initial vocational education and training. Each project can last one or two years.

Each project can include the mobility of students, teachers and staff. Students can go abroad to study specific subjects or to attend a work placement. Teachers can visit partner institutions to teach specific courses. Teachers and staff can also visit partner institutions to learn good practices with business-provided courses and/or through a job shadowing/observation period.

The institution or consortium that applies for funding has to define:

- *how they are going to choose the participants,*
- *what services are they going to offer them (travel assistance, mentoring, language courses, ...),*
- *which are the receiving institutions,*
- *what are the activities that are going to be performed abroad,*
- *how the whole procedure is going to be controlled and evaluated,*

- *how the institution and other stakeholders are going to benefit from the project,*
- *how the future sustainability is going to be guaranteed,*
- *which are the dissemination activities.*

The application document including the project description of these procedures is presented and evaluated every year and only the projects with the highest marks will receive funding.

Students can go abroad to study or attend a work placement for periods between 2 weeks and 12 months. Teachers and staff can receive funding for mobilities lasting between 2 days and 2 months.

Funding completely covers the travel and accommodation expenses and the participant usually does not need to contribute to cover the mobility costs. The Online Linguistic Support OLS offers the students the chance to improve their language skills.

VET mobilities - KA116

To simplify KA102, institutions with KA102 experience can apply for the "Erasmus+ VET Mobility Charter". This charter enables the holders to simplify their future applications. This charter is valid during the whole Erasmus+ programme period, but can be withdrawn if the quality standards are not maintained.

Once an institution receives the "Erasmus+ VET Mobility Charter" it does not need to apply with a complete project description to KA102 to receive funds.

HE VET mobilities - KA103

KA103 projects are those dealing with mobilities of students, teachers and staff involved in higher education.

A higher education institution (universities, VET colleges) that intends to apply to this call first has to be granted the Erasmus Charter for Higher Education, ECHE.

To receive this ECHE charter, the institution has to describe

- *how they are going to choose the participants,*
- *what services are they going to offer them (travel assistance, mentoring, language courses,…),*
- *how they are going to choose the receiving institutions,*
- *what are the activities that are going to be performed abroad,*
- *how they are going to receive incoming students,*
- *how they are going to validate de acquired knowledge using ECTS*
- *how the whole procedure is going to be controlled and evaluated,*
- *how the institution and other stakeholders are going to benefit from the project,*
- *how the future sustainability is going to be guaranteed.*

Once the Higher Education VET receives its ECHE it can apply at the beginning of each year to receive mobility grants. The total budget is divided among all the ECHE holders. Each institution receives an amount that depends on the petitions and the previous mobility performance. The mobility ECHE project is not evaluated every year. If the institution has carried out correctly previous mobilities it will continue to receive funding during all the Erasmus+ period, until 2020.

Each institution can include the mobility of students, teachers and staff in its yearly application. Students can go abroad to study specific subjects or to attend a work placement. Teachers can visit partner institutions to teach specific courses. Teachers and staff can also visit partner institutions to learn good practices with business-provided courses and/or through a job

shadowing/observation period. The yearly application budget can be used during 16 or 24 months.

Students can go abroad to study during 3 to 12 months or attend a work placement for periods between 2 and 12 months. Teachers and staff can receive funding for mobilities lasting between 2 days and 2 months.

Funding covers only a part of the accommodation expenses and the participant usually needs to contribute to cover the rest of the mobility costs. The Online Linguistic Support OLS offers the students the chance to improve their language skills

Erasmus + Key Action 1 funding criteria

In each country, the national Erasmus+ agencies coordinate the evaluation process, using the rules given by the European Erasmus+ Agency in the Erasmus+ Programme guide (EUROPEAN COMMISSION, 2015). These rules define the points given by external evaluators to the relevance, quality of the project design, and its impact and dissemination.

The points assignment does not establish any difference between projects presented by the different size of the stakeholders and it is up to each evaluator to decide whether the relevance of a small project can be higher than the relevance of a big project with the sole description of the call application.

Small VET colleges and large regional institutions, compete under the same rules, but with a completely different set of resources. The application procedure does not specify any point assignment differences for the different types of applicants.

5.5 Summary: Finding the frames for the picture

Education policies are constrained by the idea "(i) It is advisable scrupulously to respect national structures and traditions where education is concerned, but to promote a necessary harmonization by means of permanent concerted action at all levels and through more and more educational exchanges." (Janne, 1973). This idea, that appeared in the Janne Report, and has been later repeated even in the EU legislation, is nearly an oxymoron: we should harmonize education at all levels, without changing the national structures and traditions.

The European institutions have managed to find a way out of this labyrinth. EQF, EQAVET, ECVET, ECTS and Erasmus+ are supranational frameworks that offer the Member States umbrella structures that enable international compatibility. Each State is free to establish gateways between their training systems and these frameworks.

This is a top-down harmonization procedure. As it was not possible to transpose the same specific VET system into each Member State, and attain in this form the harmonization, the mentioned frameworks are ideal meeting points and every Member State is expected to arrive at some moment to these terminal stations.

The following chapter describes which have been the actions taken in France, Germany, Italy, Spain and the United Kingdom to try to move in the same direction and describes how far they are from the finishing line.

In the case of mobilities in VET, Chapter 6 analyses the existing data with the mathematical tools proposed in Chapter 2 to monitor Erasmus+.

III COMPARATIVE RESEARCH

6. Description of VET in France, Germany, Italy, Spain and the United Kingdom

France, Italy and Spain are examples of what Greniert defines as the state-regulated model, Germany is the main example for the dual corporate model, whereas the United Kingdom represents the liberal market model (Greinert, 2004).

Germany, the United Kingdom and Spain were the top three destination countries for individuals taking a Leonardo training in 2007-2011, attracting between them 45 % of all participants. Most participants came from Germany, France and Italy (EUROPEAN COMMISSION, 2012).

The information coming from these five countries can give us a wide image of the VET situation in Europe.

This chapter describes how are the VET systems of these countries and how are they implementing the European frameworks: EQF, EQAVET, ECVET / ECTS and Erasmus+.

6.1 France

6.1.1 Indicators and benchmarks

In 2012, 426.320 upper secondary students studied in Vocational Education and Training programmes in France (CÉREQ, 2014). According to Eurostat, 44.2% of the students enrolled in upper secondary education during 2012 were attending vocational programmes (UOE data collection on education systems, date of extraction, 30.5.2014).

Also according to Eurostat (General government expenditure by function -COFOG- database), the general government expenditure on education as a proportion of GDP has remained slightly above the EU average (5.5% in 2013 compared to 5.0%).

The Education and Training Monitor 2015 – France (EUROPEAN COMMISSION, 2015 FR, p. 9) mentions:

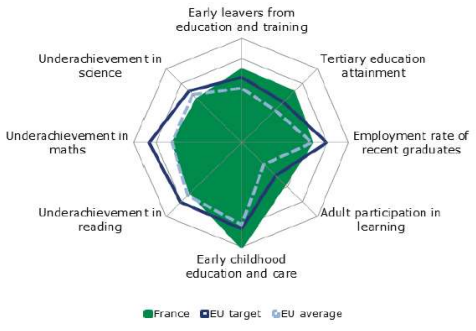
> *Participation of upper secondary students in vocational education and training remains below the EU average (43% compared with 48.9% in 2013). Around 27% of students in vocational education and training are involved in work-based learning. In 2014, the employment rate of recent upper secondary graduates (People aged 20-34 who left education between one and three years before the reference year) was slightly below the EU average (66.9% compared to 70.8%). The number of students having obtained VET qualifications (baccalauréats professionnels) increased from 156.063 in 2011 to 190.700 in 2014* (MENSER, 2015) *Yet, the number of young people involved in apprenticeships is down by 3% from a peak of 438 000 during the 2012/13 school year to around 424 000 during 2013/14. A similar trend is seen regarding newly signed apprenticeship contracts. The overall decrease is mostly due to a declining number of apprentices at secondary and post-secondary non-tertiary levels, while apprentice numbers at tertiary level are gradually increasing.*

FIGURE 4 FRANCE- KEY INDICATORS AND BENCHMARKS

		France		EU average	
		2011	2014	2011	2014
Educational poverty and spending cuts: challenges for the education sector					
Share of 15 year-olds with underachievement in:	Reading •	:	18.9% [12]	:	17.8% [12]
	Maths •	:	22.4% [12]	:	22.1% [12]
	Science •	:	18.7% [12]	:	16.6% [12]
Education investment	Public expenditure on education as a percentage of GDP	5.5%	5.5% [13]	5.1%	5.0% [13]
	Public expenditure on education as a share of total public expenditure	9.8%	9.6% [13]	10.5%	10.3% [13]
Education attainment levels of young people across Europe					
Early leavers from education and training (age 18-24)	Men	13.8%	9.5% [u]	15.2%	12.7%
	Women	10.1%	7.4% [u]	11.5%	9.5%
	Total •	11.9%	8.5% [u]	13.4%	11.1%
Tertiary education attainment (age 30-34)	Men	39.0%	39.6%	31.0%	33.6%
	Women	47.4%	48.4%	38.7%	42.3%
	Total •	43.3%	44.1%	34.8%	37.9%
Policy levers for inclusiveness, quality and relevance					
Early childhood education and care (participation from age 4 to starting age of compulsory education) •		100.0%	100.0% [13]	93.2%	93.9% [13]
Teachers' participation in training	Any topic (total)	:	76.4% [13]	:	84.6% [13]
	Special needs education	:	23.2% [13]	:	32.4% [13]
	Multicultural settings	:	3.6% [13]	:	13.2% [13]
	ICT skills for teaching	:	39.8% [13]	:	51.0% [13]
Foreign language learning	Share of ISCED 2 students learning two or more foreign languages	52.6%	52.9% [12]	63.0%	: [12]
Share of ISCED 3 students in vocational education and training (VET)		44.6%	43.0% [13]	50.4%	48.9% [13]
Employment rate of recent graduates by education attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4	68.4%	66.9%	71.3%	70.8%
	ISCED 5-8	83.5%	80.4%	82.5%	80.5%
	ISCED 3-8 (total) •	77.6%	75.4%	77.1%	76.1%
Learning mobility	Inbound graduates mobility (bachelor)	:	: [13]	:	: [13]
	Inbound graduates mobility (master)	:	: [13]	:	: [13]
Adult participation in lifelong learning (age 25-64)	ISCED 0-8 (total) •	5.5%	18.6% [b]	8.9%	10.7%

Sources: Eurostat (LFS, UOE, GFS); OECD (PISA, TALIS). Notes: • ET 2020 benchmark; data refer to weighted EU average, covering a different number of Member States depending on the source; b= break in time series, d= definition differs, p= provisional, u= low reliability, [12]= 2012, [13]= 2013. Further information is found in the respective section of Volume 1 (ec.europa.eu/education/monitor).

Figure 1. Position in relation to highest (outer ring) and lowest performers (centre)



Source: DG Education and Culture calculations, based on data from Eurostat (LFS 2014 and UOE 2013) and OECD (PISA 2012, TALIS 2013). *Note:* all scores are set between a maximum (the highest performers visualised by the outer ring) and a minimum (the lowest performers visualised by the centre of the figure).

Source: (EUROPEAN COMMISSION, 2015 FR, p. 2).

The key issues of vocational training (VET) in France are as follows (CEDEFOP, 2008):

- *The State plays a central role determining the initial VET policy system and being responsible for programmes, certification, funding and personnel*
- *The regions have been responsible since 2004 for designing and implementing their own VET policies to tackle unemployment of young people and adults*
- *The social stakeholders help to define and implement VET policies and to fund the training of employees and jobseekers*
- *Access to VET and to certification is a right. Training is offered free of charge and the opportunity is given to certify professional experience.*
- *VET quality is controlled through specific procedures*
- *Skills can be acquired through formal, non-formal or informal learning.*

The initial vocational education and training in France is currently undergoing a transformation:

> *As regards initial vocational education and training, the main elements of the 2013 reform of compulsory education are now being implemented. The national 'Economy-Education' Council (established at the end of 2013 to improve the links between education and economic actors) has seen its remit extended to cover also connections with tertiary education. New 'Campuses of professions and qualifications' bringing together different levels of vocational education, research and companies around a specific sector have been set up (31 in 2015, working towards a medium-term objective of 100 campuses). The parcours Avenir, aimed at raising pupils' awareness and define their education and professional project, is to be applied for all pupils as of September 2015 (Ministry of Education 2015c).*
>
> *The government's objective is to reach 500 000 apprentices by 2017. As set out in the plan to re-launch apprenticeship, a significant communication effort aimed at young people and companies has been undertaken to promote apprenticeships in private and public sectors. On top of different financial incentives applied in the framework of the plan, a new financial incentive of EUR 4 400 was introduced in June 2015 for companies with fewer than 11 employees recruiting a young (less than 18 years old) apprentice.*
>
> (EUROPEAN COMMISSION, 2015 FR, p. 10)

6.1.2 VET Studies and certificates

The « diplômes liste des Édition 2015 » published by the *Ministère de l'Éducation nationale de l'Enseignement supérieur et de la Recherche* (National Ministry of Education) (MINISTÈRE DE L'ÉDUCATION NATIONALE DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE, 2015 A) lists all the current available studies in France. These studies are assigned -to five types of diplomas. These diplomas are divided into 5 levels, being level 5 the first of the levels and level 1 the highest level. (EDUSCOL, 2015). These levels, V to I, match the levels 3 to 8 of the European Qualifications Framework. Some of the diplomas can be achieved as alternance training (MINISTÈRE DE L'ÉDUCATION NATIONALE DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE, 2015 B).

LEVEL V

***Le certificat d'aptitude professionnelle - CAP*, Professional aptitude certificate**

Students can attain this certificate in three different ways:

- *At lycées professionnels (professional High Schools) and at other private technical schools. After 2 years of study the students have to pass an exam.*
- *As apprentices at centres de formation d'apprentis - CFA (apprenticeship training centres) or at the sections d'apprentissage – SA (apprentice sections). The students have to accomplish 800 hours at the CFA during two years.*
- *Continuous professional training. Adults can contact a Greta institution to achieve this certification.*

***Le brevet d'études professionnelles – BEP*, Diploma in professional studies**

Exam that can be prepared during the studies of the baccalauréat professionnel or as a CAP apprentice.

LEVEL IV

***Le baccalauréat technologique*, Technical baccalaureate**

Students attend *lycées* (High Schools) and, after 3 years, the student can decide to enter the labour market and/or continue studying the BTS higher education studies.

***Le baccalauréat professionnel – Bac Pro*, Professional baccalaureate**

Students can attain this certificate in three different ways:

- *At lycées professionnels (professional High Schools) and at other private technical schools. The students have to first attain a CAP or BEP certificate. After the first year, seconde, they can decide to change the studies and choose a different one from the same professional area. Students that have previously achieved a CAP or BEP can directly start at the stage première professionelle of studies of the same professional area.*
- *As apprentices at centres de formation d'apprentis - CFA (apprenticeship training centres) or at the sections d'apprentissage – SA (apprentice sections). The students have to accomplish 1850 hours at the CFA during three years.*
- *Continuous professional training. Adults can contact a Greta institution to achieve this certification.*

The student can enter the labour market and/or continue studying BTS higher education studies.

***Le brevet professionnel*, Professional diploma**

This diploma certifies the knowledge learnt during a previous Level V study (CFA/SA). Depending on the previous studies and work experience, it can be achieved by passing an exam after 240 to 400 hours of training and/or with a validation of work experience.

***Brevets de technicien (BT)*, Technical diploma**

These studies are being replaced with the *Bac Techno* and *Bac Pro* studies.

Le brevet des métiers d'art, Diploma in arts

Students can attain this certificate in three different ways:

- *At lycées professionnels (professional High Schools) and at other private technical schools. The students have to first attain a CAP or BEP certificate. These studies last two years.*
- *As apprentices at centres de formation d'apprentis - CFA (apprenticeship training centres) or at the sections d'apprentissage – SA (apprentice sections).*
- *Continuous professional training. Adults can contact a Greta institution to achieve this certification.*

La mention complémentaire (diplôme de niveau IV ou V), complementary studies

Students that have achieved a certification in level IV and V can attend specific courses to broaden their qualifications. The certificate can be achieved by passing an exam and/or through the validation of work experience. The preparation for the exam can be done at a training institution (400 hours in a year) or with on-the-job training (12 to 18 weeks).

LEVEL III

Le brevet de technicien supérieur – BTS, Advanced technical diploma

Higher education studies in vocational education and training that lasts 2 years and takes place at a *lycée* (High School). Applicants need to have passed any of the different *baccalauréats* (baccalaureates) for entry. Graduates may continue studying at high school and university.

Diplome Universitaire de Technologie – DUT, University of technology diploma

Higher education studies in vocational education and training that lasts 2 years and takes place at a university. Applicants need to have passed any of the different *baccalauréats* (baccalaureates) for entry. Graduates may continue studying at high school and university.

Le diplôme des métiers d'art – BMA, Arts diploma

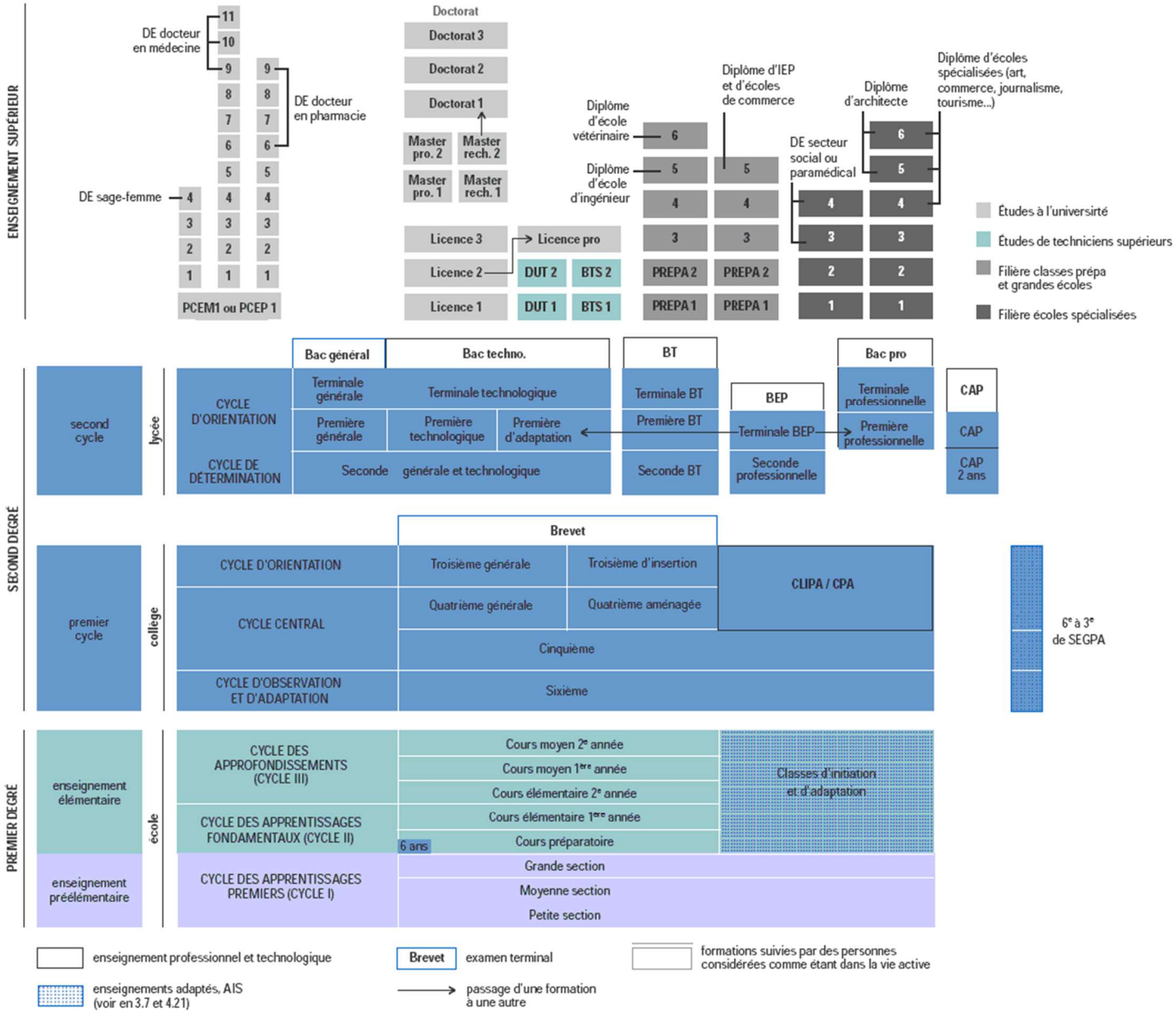
This higher education certification grants the possibility to work in the arts and crafts sector.

LEVEL I

Le diplôme supérieur d'arts appliqués, Superior diploma in arts

Highest qualification that entitles the holder to work in creative sectors.

FIGURE 5 ORGANISATION OF THE FRENCH EDUCATION SYSTEM AND OF ITS STRUCTURE



Source: (EURYDICE, 2015 FR)..

6.1.3 National Qualifications Framework

The foundation in 2002 of the *Commission Nationale de la Certification Professionnelle – CNCP* (National Committee for Professional Certification) and the *Répertoire national des certifications professionnelles - RNCP* (national register of vocational qualifications) establishes the French NQF. This system supports non-formal and informal learning (*validation des acquis de l'experience, VAE*) and focuses on vocationally or professionally oriented qualifications. (CEDEFOP, 2012 NQF, pp. 93-101).

The *Commission Nationale de la Certification Professionnelle – CNCP* (National Committee for Professional Certification) is the EQF National Contact Point – NCP and cooperates with the Ministries, social partners and other relevant stakeholders like the chambers of commerce.

The existing five-level structure dates back to 1969. Since 2009, different stakeholders consider an eight-level structure would align better with the EQF, but the future is still unclear. Defining qualifications at EQF levels 1 and 2 is seen as a threat to the working conditions of the less qualified workers.

In 2010, the EQF framework was referenced using the original five-level structure as a guideline.

The French NQF covers three main types of qualifications:

- those awarded by French ministries in cooperation with the social partners through a *commissions professionnelles consultatives – CPC* (Professional consultant commission)

- those awarded by training-providers, chambers of commerce and ministries but without *commissions professionnelles consultatives – CPC* (Professional consultant commission)

- those awarded by social partners under their own responsibility.

To include a qualification in the *Répertoire national des certifications professionnelles - RNCP* (national register of vocational qualifications) it should meet quality requirements and national transparency conditions. All these qualifications must also be available through validation of non-formal and informal learning.

The French NQF is fully implemented and operational, integrating, for example, the Europass tools. In recent years, the number of CNCP registered qualifications has been increasing, especially in vocational and professional qualifications situated at EQF levels 5 and 6.

TABLE 12 FRANCE, MAIN NQF LEVEL DESCRIPTOR ELEMENTS

	Level definition	Learning outcomes
Level V	Personnel holding jobs normally requiring a level of training equivalent to that of the vocational studies certificate (BEP) or the certificate of vocational ability (CAP), and, by assimilation, the level one certificate of vocational training for adults (CFPA).	This level corresponds to full qualification for carrying out a specific activity with the ability to use the corresponding instruments and techniques. This activity mainly concerns execution work, which can be autonomous within the limits of the techniques involved.
Level IV	Personnel holding jobs at a supervisory highly skilled worker level and able to provide proof of a level of training equivalent to that of the vocational certificate (BP), technical certificate (BT), vocational baccalaureate or technological baccalaureate.	A level IV qualification involves a higher level of theoretical knowledge than the previous level. This activity concerns mainly technical work that can be executed autonomously and/or involve supervisory and coordination responsibilities.
Level III	Personnel holding jobs normally requiring a level of training equivalent to that of a diploma from a university institute of technology (DUT) or a technology certificate (BTS) or a certificate corresponding to the end of the first higher education cycle.	A level III qualification corresponds to higher levels of knowledge and abilities, but without involving mastery of the fundamental scientific principles for the fields concerned. The knowledge and abilities required enable the person concerned to assume, autonomously or independently, responsibilities concerning design and/or supervision and/or management.
Level II	Personnel holding jobs normally requiring a level of training comparable to that of a bachelor's or master's degree.	At this level, exercise of a salaried or independent vocational activity involves mastery of the fundamental scientific principles for the profession, generally leading to autonomy in exercising that activity.
Level I	Personnel holding jobs normally requiring a level of training above that of a master's degree.	As well as confirmed knowledge of the fundamental scientific principles for a vocational activity, a level I qualification requires mastery of design or research processes.

Source: (CEDEFOP, 2013 NQF).

TABLE 13 CORRESPONDENCE BETWEEN THE FRENCH NQF AND THE EQF

French 5-level structure	EQF
I – Doctorate grade	8
I – Master grade	7
II – Bachelor grade	6
III	5
IV	4
V	3
Not applicable	2
Not applicable	1

To not assign any French qualifications to the EQF levels 1 and 2 has political consequences that have been pointed out by members of the EQF advisory group AG. The current assignment could, for example, prevent workers qualified at EQF levels 1 and 2 from other countries to apply for jobs in France (CEDEFOP, 2012 NQF, p. 100) .

6.1.4 ECTS and ECVET credit system

The ECTS credit system is already being used in the French Higher Education studies, including the VET studies at EQF level 5:

- *Brevet de technicien supérieur – BTS, Advanced technical diploma*
- *Diplome Universitaire de Technologie – DUT, University of technology diploma*

Development of ECVET in France is still underway. The structure of VET qualifications at EQF levels 3 and 4 are diverse and are offered by different stakeholders: ministries (education, agriculture, sports, health, culture), chambers of commerce, sectors, and private providers. The *Ministère de l'Éducation nationale de l'Enseignement supérieur et de la Recherche* (Ministry of Education) is responsible for the largest amount of these qualifications (CEDEFOP, 2013 ECVET A).

A legal framework that includes a list of individual certification units describes each of the qualifications provided by the *Ministère de l'Éducation nationale de l'Enseignement supérieur et de la Recherche*. Although these certification units might seem to be independent modules, they are not certified independently and they have to be all achieved to receive the final qualification. The students have to work focusing on receiving the full state-recognised award and cannot combine different units nor change the learning order (Malicot, 2008, p. 8).

Changes in the training path are possible to some extent, but they depend on the validation by the *Ministère de l'Éducation nationale de l'Enseignement supérieur et de la Recherche*.

The transfer of learning outcomes between diplomas and qualifications depends on different awarding institutions that will provide individual responses.

The validation of non-formal and informal learning has become systematic since the 2002 Act for the qualifications mentioned in the national register for vocational qualifications.

Although France is working towards international studies recognition, at the moment, international mobility studies are not automatically recognised. The French quality assurance measures requires the students to be reassessed following the national assessment standards.

During 2011 and 2012, the *Ministère de l'Éducation nationale de l'Enseignement supérieur et de la Recherche* carried out the MEN-ECVET project to evaluate the possibility of using ECVET and they focused on their flagship qualification, the *baccalauréat professionnel*, EQF 4 (MINISTÈRE DE L'ÉDUCATION NATIONALE DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE, 2013).

In the case of the *baccalauréat professionnel* studies, the different units (vocational and general) receive a specific weight, a coefficient that indicates the significance of each of the units as part of the final qualification as a whole. Although these coefficients vary across the different *baccalauréat* studies, they could be used as a starting point to assign ECVET credits (MINISTÈRE DE L'ÉDUCATION NATIONALE DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE, 2013, p. 14).

To facilitate mobility programmes, this project proposes to create an optional mobility unit. This unit would recognise the learning outcomes achieved abroad, but would not be necessary to receive the standard official diploma (MINISTÈRE DE L'ÉDUCATION NATIONALE DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE, 2013, p. 16).

6.1.5 EQAVET quality assurance

The *Ministère de l'Éducation nationale de l'Enseignement supérieur et de la Recherche* is in charge of Quality Assurance in Vocational Education and Training as it defines strategies, policies, framework and learning and teaching programmes and ensures staff recruitment and management of training activities. This Ministry is also responsible for vocational education at secondary level, including a national curriculum, exams and diplomas, recruitment, training and other related activities. The department "High Council for Evaluation" evaluates the performance and activities of teachers, covering the field of secondary vocational training (EQAVET Secretariat, 2015 FR a).

During recent years, France has taken many initiatives to introduce quality criteria for its VET system.

On one hand, at a national level, the Outline Financial Legislation Act (LOLF) of 1 August 2001 introduced 'a culture of results, of spending more wisely and making public action more effective'.

> *The overall national budget is now broken down by missions, programmes and measures – rather than by ministry, as previously – so that performance indicators can be drawn up. In addition, the Research, Surveys and Statistics Development Department (DARES) of the Ministry of Employment, the Evaluation, Forecasting and Performance Department (DEPP) of the Ministries of Education and of Higher Education and Research, and the Centre for qualifications Studies and Research (CEREQ) all compile statistics and conduct studies to assess the effectiveness of the policies implemented.*
>
> (EQAVET Secretariat, 2015 FR a).

On the other hand, at a regional level, the regional councils, which are now in charge of apprenticeships and vocational training for young people and adults, have adopted 'quality charters'.

These documents are co-signed by vocational bodies representing particular sectors, or by training organisations that enter into contractual agreements with the region.

They cover various aspects of training, such as:

- *Improving provision for apprentices, placing workers in jobs, and qualifications in specific sectors;*
- *Enhancing the quality of services offered by training bodies, including the way trainees are treated on work placement, as well as training methods, follow-up and help with job finding.*

(EQAVET Secretariat, 2015 FR a)

At training provider level, in the early 1990s, a number of quality labels were introduced in France, to certify the quality of training organisations and trainers.

6.1.6 Erasmus+ VET mobility

The French Erasmus+ National Agency, *L'Agence Erasmus+ France / Education Formation*, awarded during the period 2014/2016 Erasmus+ KA102 VET funds to 822 projects proposed by 552 different institutions. 11% of these institutions received funds at the calls of the three years. The average amount of projects per institution was 1.49 (see Table 16).

In 2014 the amount of 29,826,587 € in KA 102 grants was distributed to 317 projects, in 2015 the total of 27,799,214 € went to 273 projects and in 2016 the amount of 24,293,440 € was assigned to 274 projects (see Table 14).

57.96 % Students with a Fair Access to Funds – SFAF, (see Equation 2) of all the French students had the possibility to benefit, during 2014, from a standard amount of KA 102 grants, RME between 50% and 200% (see Equation 1) 67.41% in 2015, 45.5% in 2016, making an average in the period of SFAF=56.96% (see Table 15).

The National Equity - NE (see Equation 3 National Equity) determines if the funds have mathematically been equally distributed, meaning NE=100% that all the students had equal chances to receive funds and NE=0% that no students had access to funds. In the case of France, the National Equity was 71.89% in 2014, 76,24% in 2015 and 68.35% in 2016. The average value for the period was NE=72.16% (see Table 15).

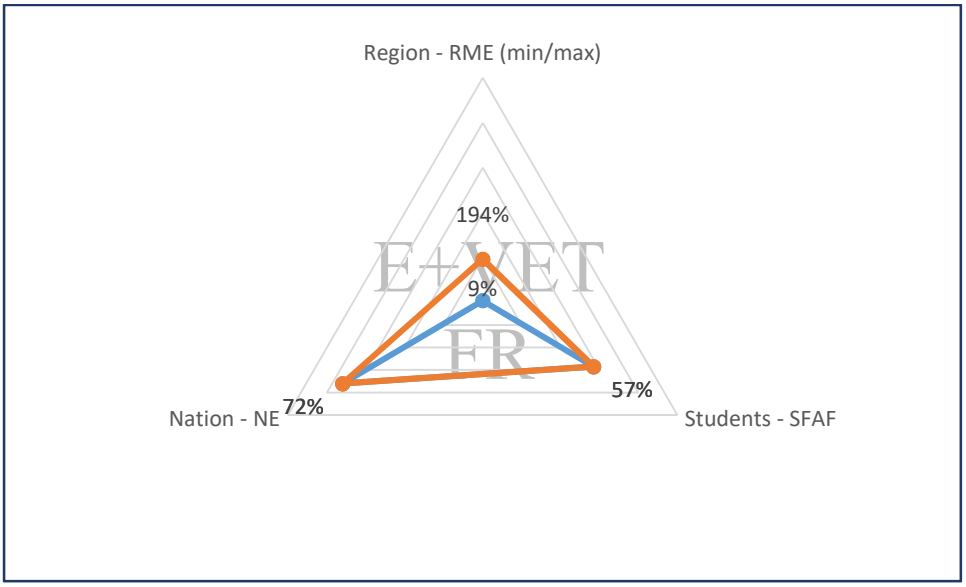
On average, during the whole period the amount received per project was 100,211 € and each of the most frequent-sized of projects received 0,1% of the total national budget. There were on average 42% of these frequent-sized projects that received the last 12% of the national budget (see Table 14).

The first 20% of the national budget was awarded to the 4.3 (on average) biggest projects. These projects represent 2 % of all the projects (see Table 14).

The first 50% of the national budget was awarded to the 22 (on average) biggest projects. These projects represent 8 % of all the projects (see Table 14).

During the period 2014-2016 the region of Auvergne had the maximum Regional Mobility Efficiency, RME=194% and Corse the minimum, RME=9% (see Table 20).

FIGURE 6 FRANCE- REGIONAL, STUDENTS´ AND NATIONAL 2014/2016 AVERAGE VALUES



Source: Compiled by the author with data from Table 15 and Table 20 (RME values presented 10 times smaller).

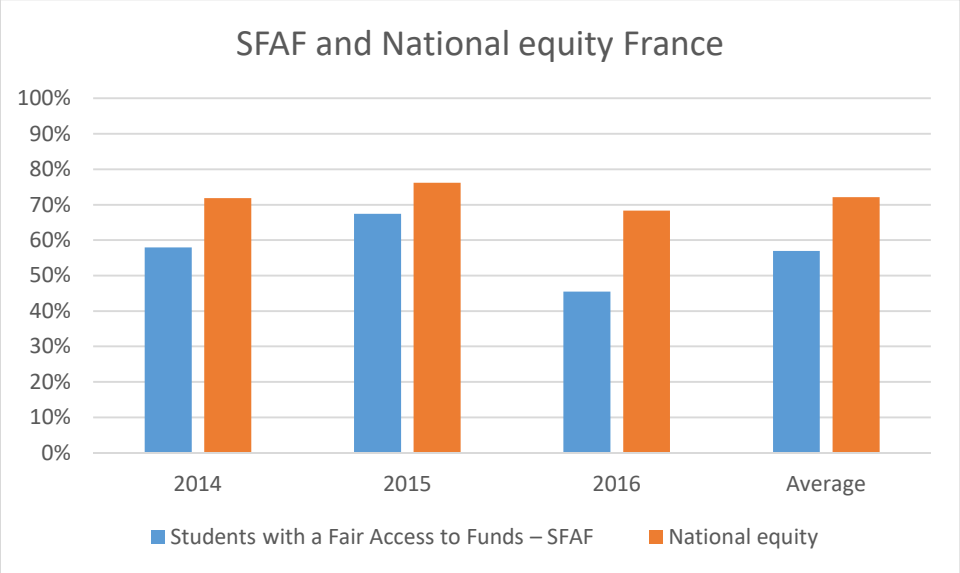
The funding data of years 2014, 2015 and 2016 was provided by the French Erasmus+ National Agency, *L'Agence Erasmus+ France / Education Formation* (L´AGENCE ERASMUS+ FRANCE, 2016). The information about the amount of students in each region was provided by CÉREQ (CÉREQ, 2014). This data was used to perform the estimations and create the graphs available in this section and section 7.4.

TABLE 14 FRANCE - MONITORING ERASMUS+ VET 2014/2016

	2014	2015	2016	Average
National budget	29,826,587 €	27,799,214 €	24,293,440 €	27,306,414 €
Number of projects	317	273	232	274
Biggest Project	1,716,704 €	1,736,323 €	1,863,650 €	1,772,226 €
Smallest Project	3,933 €	7,214 €	1,951 €	4,366 €
Average Project	94,090 €	101,829 €	104,713 €	100,211 €
Projects / Region	13.78	11.87	10.09	11.91
€/ Region	1,296,808 €	1,208,661 €	1,056,237 €	1,187,235 €
Amount of projects that represent 20% of the budget	5	4	4	4.3
… percentage of nations total	2%	1%	2%	2%
Amount of projects that represent 50% of the budget	25	23	18	22
… percentage of nations total	8%	8%	8%	8%
Most frequent size, in % of national budget	0.1%	0.1%	0.1%	0.1%
amount of frequent size projects	154	111	88	118
amount of frequent size projects, % over total	49%	41%	38%	42%
… and represent % of the total budget	15%	11%	9%	12%
Students in regions with more than the national average budget	47.12%	47.70%	44.14%	46.32%
Students in regions with less than the national average budget	52.88%	52.30%	55.86%	53.68%
Students in regions with more than double the national average budget	4.64%	2.06%	17.77%	8.15%
Students in regions with less than half the national average budget	37.40%	30.54%	36.73%	34.89%
Students in regions with no access to funds	0.00%	5.33%	0.41%	1.91%
Students with a Fair Access to Funds – SFAF	**57.96%**	**67.41%**	**45.50%**	**56.96%**
National equity	**71.89%**	**76.24%**	**68.35%**	**72.16%**
Regions	23	23	23	23
Regions with biggest project greater than 30%	17	13	17	16
… percentage of nations total	73.91%	56.52%	73.91%	68.12%
Regions with biggest project greater than 50%	8	7	8	8
… percentage of nations total	34.78%	30.43%	34.78%	33.33%
Institutions that have always received funds (2014/2016)				**11%**
Average projects per institution (2014/2016)				**1.49**

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 7 FRANCE - SFAF AND NATIONAL EQUITY 2014/2016



Source: Compiled by the author with the data referenced at the beginning of this section.

TABLE 15 FRANCE - SFAF AND NATIONAL EQUITY 2014/2016

	2014	2015	2016	Average
Students with a Fair Access to Funds – SFAF	58%	67%	46%	57%
National equity	72%	76%	68%	72%

Source: Compiled by the author with the data referenced at the beginning of this section.

TABLE 16 FRANCE - TIMES AN INSTITUTION HAS BEEN FUNDED 2014/2016

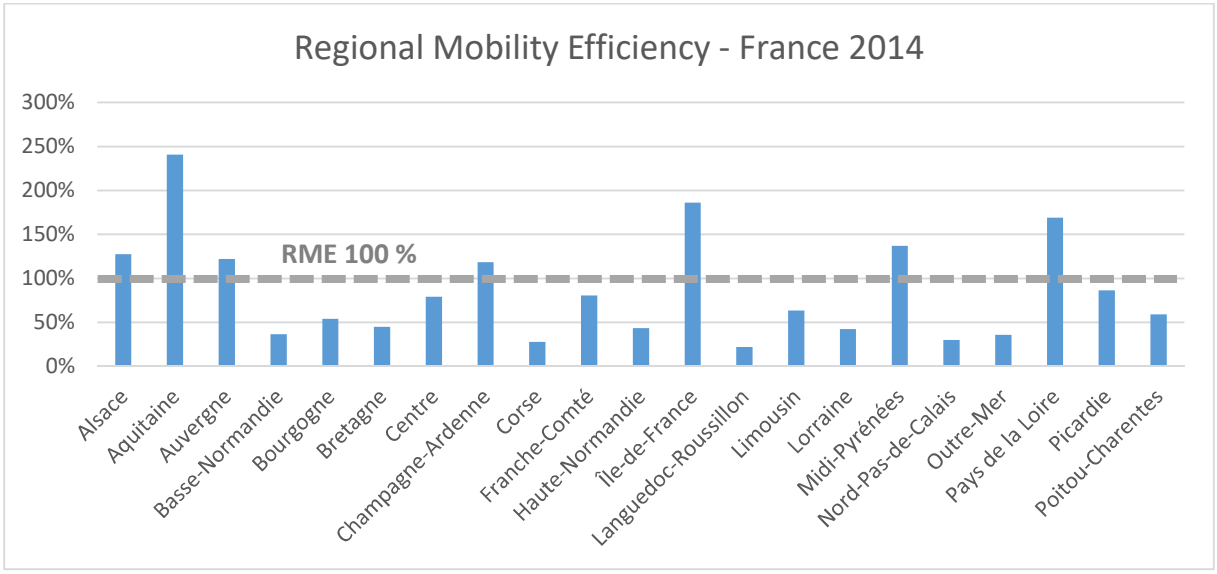
	Times an institution has been funded 2014/2016						
Region	Once	Twice	Always	Always (% of regional institutions)	Institutions in the region	Institutions from national total	Regional regurality
Alsace	5	1	0	0%	6	1%	0.00
Aquitaine	36	13	6	11%	55	10%	1.09
Auvergne	14	7	1	5%	22	4%	1.14
Basse-Normandie	4	2	0	0%	6	1%	0.00
Bourgogne	11	4	1	6%	16	3%	2.16
Bretagne	18	7	2	7%	27	5%	1.51
Centre	3	2	2	29%	7	1%	22.53
Champagne-Ardenne	15	3	0	0%	18	3%	0.00
Corse	1	0	0	0%	1	0%	0.00
Franche-Comté	6	2	0	0%	8	1%	0.00
Haute-Normandie	9	8	3	15%	20	4%	4.14
Île-de-France	56	35	17	16%	108	20%	0.80
Languedoc-Roussillon	17	5	2	8%	24	4%	1.92
Limousin	4	1	0	0%	5	1%	0.00
Lorraine	8	4	0	0%	12	2%	0.00
Midi-Pyrénées	13	6	2	10%	21	4%	2.50
Nord-Pas-de-Calais	6	2	1	11%	9	2%	6.81
Outre-Mer	11	1	0	0%	12	2%	0.00
Pays de la Loire	31	18	13	21%	62	11%	1.87
Picardie	9	1	1	9%	11	2%	4.56
Poitou-Charentes	12	4	1	6%	17	3%	1.91
Provence-Alpes-Côte d'Azur	18	10	2	7%	30	5%	1.23
Rhône-Alpes	34	16	5	9%	55	10%	0.91
Total institutions	341	152	59	11%	552	100%	0.11
Total projects	341	304	177		822		

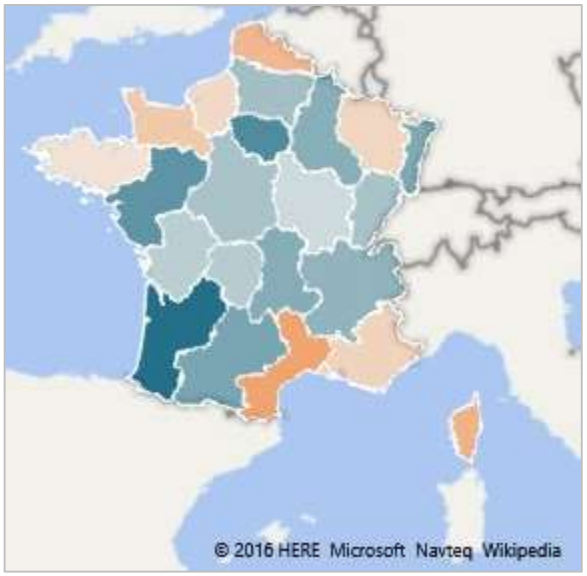
Source: Compiled by the author with the data referenced at the beginning of this section. The regional regularity is the percentage of regional institutions that have always received funds divided by the percentage of regional institutions from the national total.

During the period 2014/2016, 59 out of 552 institutions were funded each of the three years. Centre had 1% of all the funded institutions and, as 29% of its institutions always received funds, this region has the greatest Regional regularity, 22.53.

Alsace, Basse-Normandie, Champagne-Ardenne, Corse, Franche-Comté, Limousin, Lorraine, Outre-Mer were the 8 regions out of 23 that did not have any institutions receiving funds during the 3 years.

FIGURE 8 FRANCE - ERASMUS+ VET RME 2014





NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Region	RME 2014
Alsace	127%
Aquitaine	241%
Auvergne	122%
Basse-Normandie	37%
Bourgogne	54%
Bretagne	45%
Centre	79%
Champagne-Ardenne	119%
Corse	28%
Franche-Comté	81%
Haute-Normandie	43%
Île-de-France	186%
Languedoc-Roussillon	22%
Limousin	64%
Lorraine	42%
Midi-Pyrénées	137%
Nord-Pas-de-Calais	30%
Outre-Mer	36%
Pays de la Loire	169%
Picardie	86%
Poitou-Charentes	59%
Provence-Alpes-Côte d'Azur	41%
Rhône-Alpes	108%

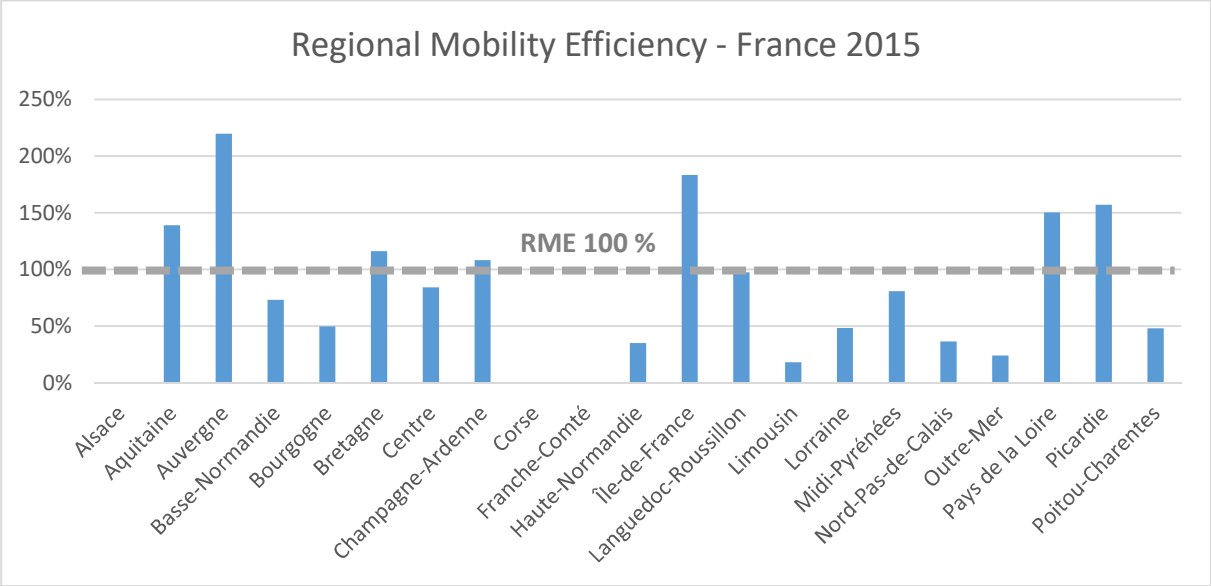
Source: Compiled by the author with the data referenced at the beginning of this section.

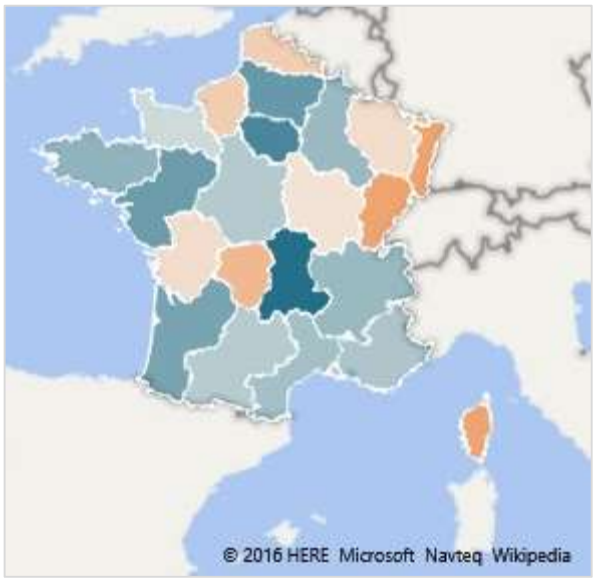
TABLE 17 FRANCE - ERASMUS+ VET REGIONAL DATA 2014

FRANCE 2014	Budget		Students		Projects		Biggest project	% from regional budget	% from total budget	Projects / 100 K Students	€/Project	€/ Student	Regional Mobility Efficiency RME	Inequity	Inequity	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
Alsace	1,134,285 €	3.8%	12,716	3.0%	5	2%	851,698 €	75%	2.86%	39.32	226,857 €	89.20 €	127%	1%	1%	2.98%				
Aquitaine	3,329,576 €	11.2%	19,765	4.6%	36	11%	1,118,413 €	34%	3.75%	182.14	92,488 €	168 €	241%	7%	7%	4.64%				
Auvergne	748,370 €	2.5%	8,769	2.1%	11	3%	203,440 €	27%	0.68%	125.44	68,034 €	85 €	122%	0%	0%	2.06%				
Basse-Normandie	249,692 €	0.8%	9,771	2.3%	2	1%	164,011 €	66%	0.55%	20.47	124,846 €	26 €	37%	-1%	1%			4.64%		
Bourgogne	470,089 €	1.6%	12,457	2.9%	9	3%	150,480 €	32%	0.50%	72.25	52,232 €	38 €	54%	-1%	1%		2.29%			2.29%
Bretagne	635,195 €	2.1%	20,289	4.8%	9	3%	262,365 €	41%	0.88%	44.36	70,577 €	31 €	45%	-3%	3%		2.92%			
Centre	903,781 €	3.0%	16,299	3.8%	7	2%	717,796 €	79%	2.41%	42.95	129,112 €	55 €	79%	-1%	1%		4.76%			4.76%
Champagne-Ardenne	761,334 €	2.6%	9,179	2.2%	7	2%	294,240 €	39%	0.99%	76.26	108,762 €	83 €	119%	0%	0%	2.15%	3.82%			
Corse	34,152 €	0.1%	1,752	0.4%	1	0%	34,152 €	100%	0.11%	57.08	34,152 €	19 €	28%	0%	0%			0.41%		0.41%
Franche-Comté	466,075 €	1.6%	8,259	1.9%	6	2%	305,229 €	65%	1.02%	72.65	77,679 €	56 €	81%	0%	0%		1.94%			
Haute-Normandie	403,365 €	1.4%	13,297	3.1%	8	3%	167,941 €	42%	0.56%	60.16	50,421 €	30 €	43%	-2%	2%		3.12%			3.12%
Île-de-France	8,727,201 €	29.3%	66,981	15.7%	66	21%	1,716,704 €	20%	5.76%	98.54	132,230 €	130 €	186%	14%	14%	15.71%				
Languedoc-Roussillon	266,733 €	0.9%	17,377	4.1%	10	3%	56,895 €	21%	0.19%	57.55	26,673 €	15 €	22%	-3%	3%		4.08%			4.08%
Limousin	193,308 €	0.6%	4,346	1.0%	2	1%	153,708 €	80%	0.52%	46.02	96,654 €	44 €	64%	0%	0%		1.02%			
Lorraine	503,958 €	1.7%	17,041	4.0%	8	3%	233,087 €	46%	0.78%	46.95	62,995 €	30 €	42%	-2%	2%		4.00%			4.00%
Midi-Pyrénées	1,761,761 €	5.9%	18,372	4.3%	11	3%	1,058,845 €	60%	3.55%	59.87	160,160 €	96 €	137%	2%	2%	4.31%				
Nord-Pas-de-Calais	619,256 €	2.1%	29,511	6.9%	5	2%	222,036 €	36%	0.74%	16.94	123,851 €	21 €	30%	-5%	5%		6.92%			6.92%
Outre-Mer	485,183 €	1.6%	19,459	4.6%	5	2%	277,708 €	57%	0.93%	25.70	97,037 €	25 €	36%	-3%	3%		4.56%			4.56%
Pays de la Loire	2,948,192 €	9.9%	24,914	5.8%	39	12%	402,501 €	14%	1.35%	156.54	75,595 €	118 €	169%	4%	4%	5.84%				
Picardie	803,972 €	2.7%	13,298	3.1%	6	2%	356,830 €	44%	1.20%	45.12	133,995 €	60 €	86%	0%	0%		3.12%			
Poitou-Charentes	469,031 €	1.6%	11,343	2.7%	10	3%	120,752 €	26%	0.40%	88.16	46,903 €	41 €	59%	-1%	1%		2.66%			7.26%
Provence-Alpes-Côte d'Azur	885,605 €	3.0%	30,945	7.3%	18	6%	301,906 €	34%	1.01%	58.17	49,200 €	29 €	41%	-4%	4%		7.26%			
Rhône-Alpes	3,026,473 €	10.1%	40,180	9.4%	36	11%	809,238 €	27%	2.71%	89.60	84,069 €	75 €	108%	1%	1%	9.42%				
														0.00%	28.11%	47.12%	52.88%	4.64%	37.40%	0.00%

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 9 FRANCE - ERASMUS+ VET RME 2015



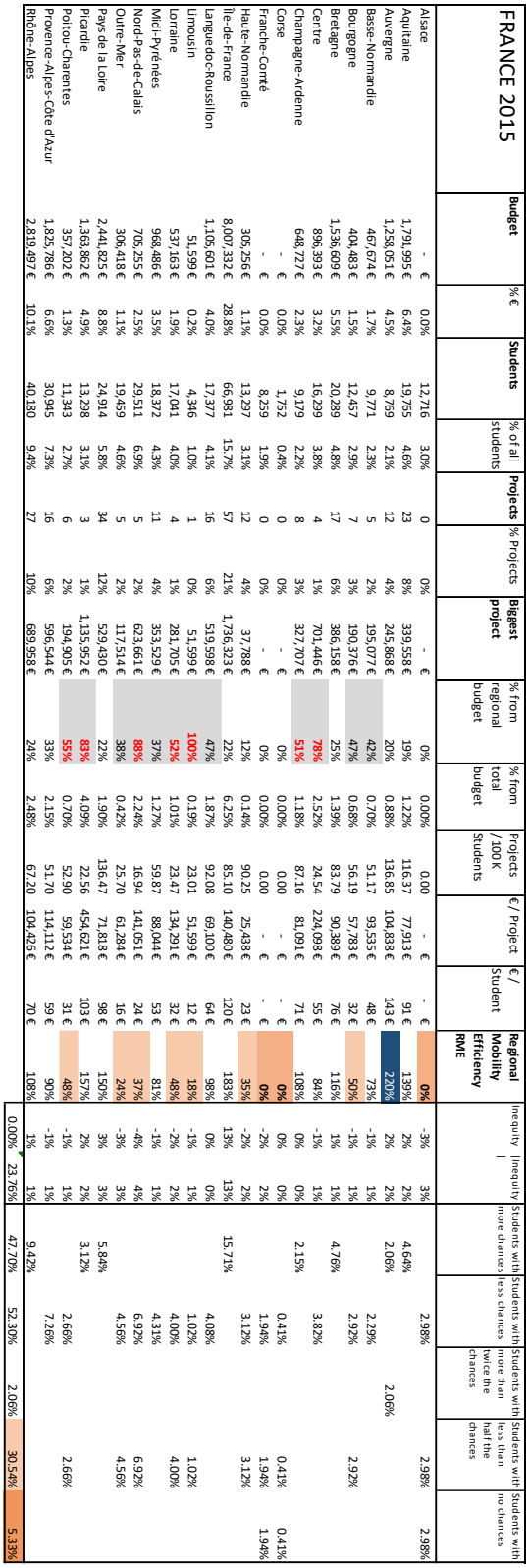


NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Region	RME 2015
Alsace	**0%**
Aquitaine	139%
Auvergne	220%
Basse-Normandie	73%
Bourgogne	50%
Bretagne	116%
Centre	84%
Champagne-Ardenne	108%
Corse	**0%**
Franche-Comté	**0%**
Haute-Normandie	35%
Île-de-France	183%
Languedoc-Roussillon	98%
Limousin	18%
Lorraine	48%
Midi-Pyrénées	81%
Nord-Pas-de-Calais	37%
Outre-Mer	24%
Pays de la Loire	150%
Picardie	157%
Poitou-Charentes	48%
Provence-Alpes-Côte d'Azur	90%
Rhône-Alpes	108%

Source: Compiled by the author with the data referenced at the beginning of this section.

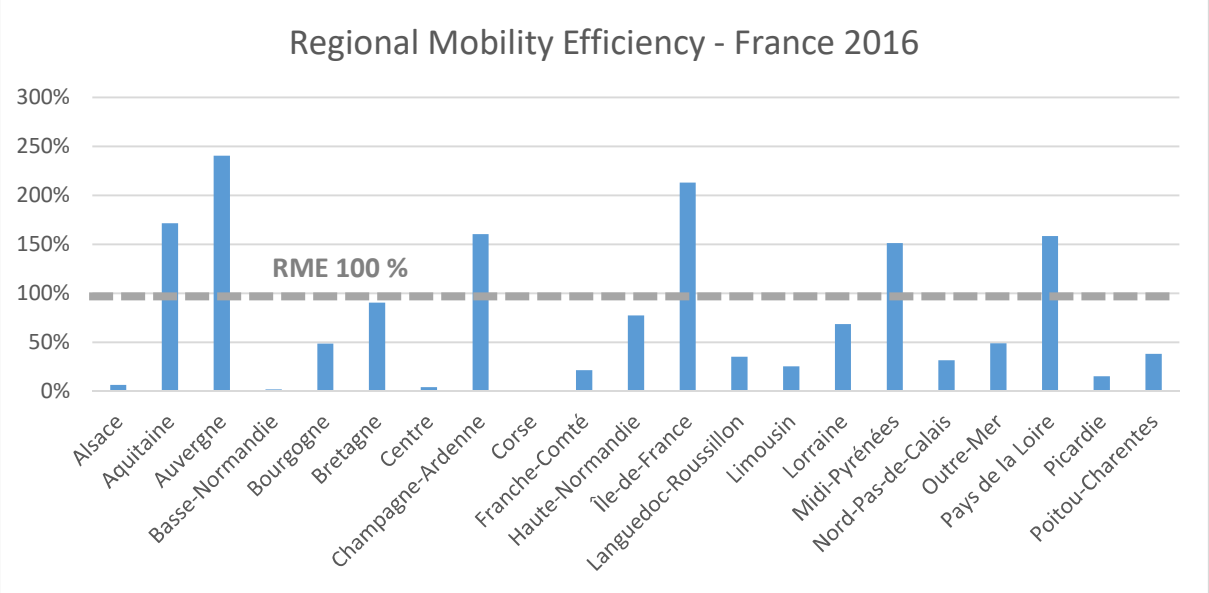
TABLE 18 FRANCE - ERASMUS+ VET REGIONAL DATA 2015

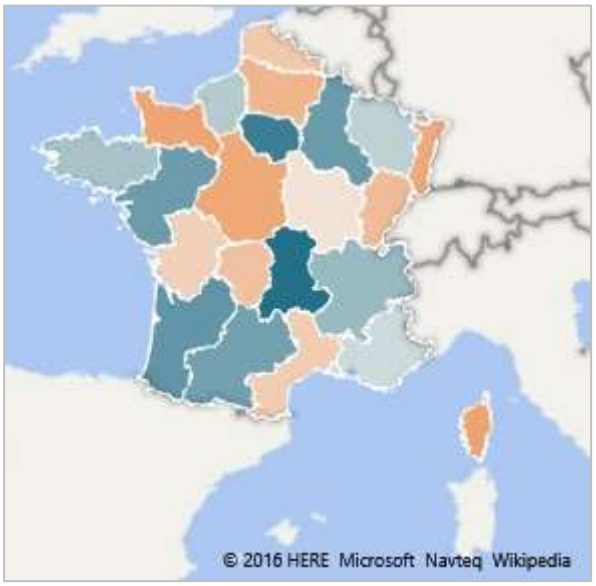


FRANCE 2015	Budget	% €	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects / 100K Students	€ / Project	€ / Student	Regional Mobility Efficiency RME	Inequity	|Inequity|	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
Alsace	- €	0.0%	12,716	3.0%	0	0%	- €	0%	0.00%	0.00	- €	- €	0%	-3%	3%		2.98%		2.98%	2.98%
Aquitaine	1,791,995 €	6.4%	19,765	4.6%	23	8%	339,558 €	19%	1.22%	116.37	77,913 €	91 €	139%	2%	2%	4.64%				
Auvergne	1,258,051 €	4.5%	8,769	2.1%	12	4%	245,868 €	20%	0.88%	136.85	104,838 €	143 €	220%	2%	2%	2.06%		2.06%		
Basse-Normandie	467,674 €	1.7%	9,771	2.3%	5	2%	195,077 €	42%	0.70%	51.17	93,535 €	48 €	73%	-1%	1%		2.29%		2.92%	
Bourgogne	404,483 €	1.5%	12,457	2.9%	7	3%	190,376 €	47%	0.68%	56.19	57,783 €	32 €	50%	-1%	1%		2.92%			2.92%
Bretagne	1,536,609 €	5.5%	20,289	4.8%	17	6%	386,158 €	25%	1.39%	83.79	90,389 €	76 €	116%	1%	1%	4.76%				
Centre	896,393 €	3.2%	16,299	3.8%	4	1%	701,446 €	78%	2.52%	24.54	224,098 €	55 €	84%	-1%	1%		3.82%			
Champagne-Ardenne	648,727 €	2.3%	9,179	2.2%	8	3%	327,707 €	51%	1.18%	87.16	81,091 €	71 €	108%	0%	0%	2.15%				
Corse	- €	0.0%	1,752	0.4%	0	0%	- €	0%	0.00%	0.00	- €	- €	0%	0%	0%		0.41%		0.41%	0.41%
Franche-Comté	- €	0.0%	8,259	1.9%	0	0%	- €	0%	0.00%	0.00	- €	- €	0%	-2%	2%		1.94%		1.94%	1.94%
Haute-Normandie	305,256 €	1.1%	13,297	3.1%	12	4%	37,788 €	12%	0.14%	90.25	25,438 €	23 €	35%	-2%	2%		3.12%		3.12%	
Île-de-France	8,007,332 €	28.8%	66,981	15.7%	57	21%	1,736,323 €	22%	6.25%	85.10	140,480 €	120 €	183%	13%	13%	15.71%				
Languedoc-Roussillon	1,105,601 €	4.0%	17,377	4.1%	16	6%	519,598 €	47%	1.87%	92.08	69,100 €	64 €	98%	0%	0%		4.08%			
Limousin	51,599 €	0.2%	4,346	1.0%	1	0%	51,599 €	100%	0.19%	23.01	51,599 €	12 €	18%	-1%	1%		1.02%		1.02%	
Lorraine	537,163 €	1.9%	17,041	4.0%	4	1%	281,705 €	52%	1.01%	23.47	134,291 €	32 €	48%	-2%	2%		4.00%		4.00%	
Midi-Pyrénées	968,486 €	3.5%	18,372	4.3%	11	4%	353,529 €	37%	1.27%	59.87	88,044 €	53 €	81%	-1%	1%		4.31%			
Nord-Pas-de-Calais	705,255 €	2.5%	29,511	6.9%	5	2%	623,661 €	88%	2.24%	16.94	141,051 €	24 €	37%	-4%	4%		6.92%		6.92%	
Outre-Mer	306,418 €	1.1%	19,459	4.6%	5	2%	117,514 €	38%	0.42%	25.70	61,284 €	16 €	24%	-3%	3%		4.56%		4.56%	
Pays de la Loire	2,441,825 €	8.8%	24,914	5.8%	34	12%	529,430 €	22%	1.90%	136.47	71,818 €	98 €	150%	3%	3%	5.84%				
Picardie	1,363,862 €	4.9%	13,298	3.1%	3	1%	1,135,952 €	83%	4.09%	22.56	454,621 €	103 €	157%	2%	2%	3.12%				
Poitou-Charentes	357,202 €	1.3%	11,343	2.7%	6	2%	194,905 €	55%	0.70%	52.90	59,534 €	31 €	48%	-1%	1%		2.66%		2.66%	
Provence-Alpes-Côte d'Azur	1,825,786 €	6.6%	30,945	7.3%	16	6%	596,544 €	33%	2.15%	51.70	114,112 €	59 €	90%	-1%	1%		7.26%			
Rhône-Alpes	2,819,497 €	10.1%	40,180	9.4%	27	10%	689,958 €	24%	2.48%	67.20	104,426 €	70 €	108%	1%	1%	9.42%				
														0.00%	23.76%	47.70%	52.30%	2.06%	30.54%	5.33%

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 10 FRANCE - ERASMUS+ VET RME 2016



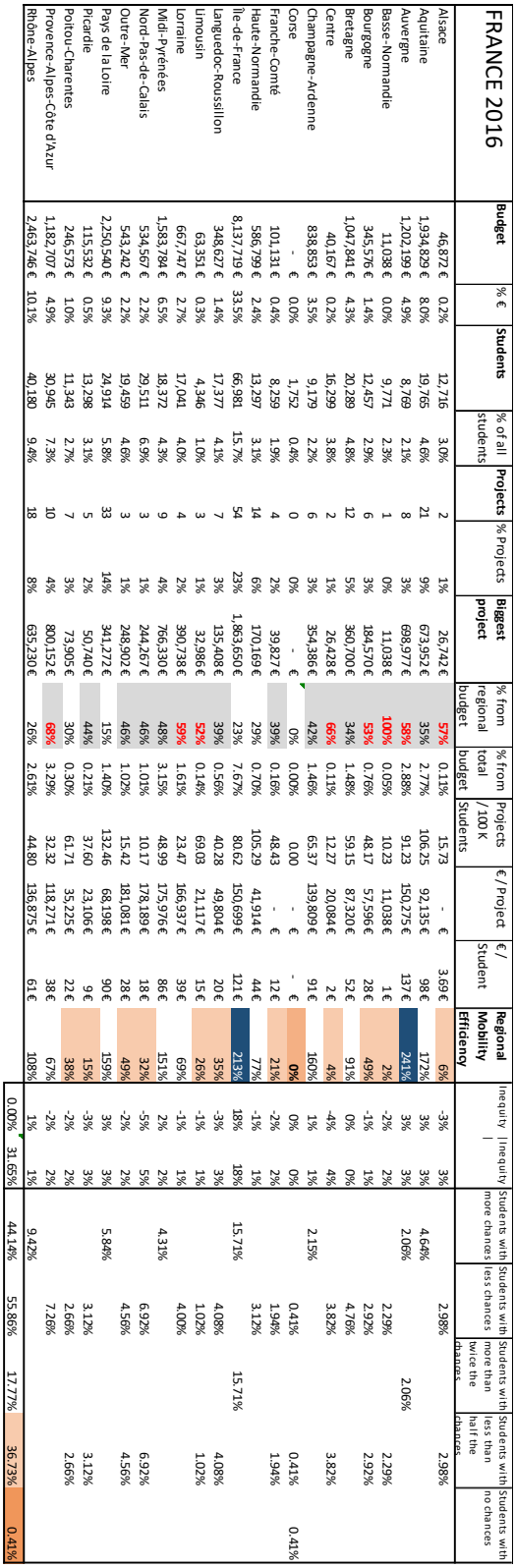


NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Region	RME 2016
Alsace	6%
Aquitaine	172%
Auvergne	241%
Basse-Normandie	2%
Bourgogne	49%
Bretagne	91%
Centre	4%
Champagne-Ardenne	160%
Corse	**0%**
Franche-Comté	21%
Haute-Normandie	77%
Île-de-France	213%
Languedoc-Roussillon	35%
Limousin	26%
Lorraine	69%
Midi-Pyrénées	151%
Nord-Pas-de-Calais	32%
Outre-Mer	49%
Pays de la Loire	159%
Picardie	15%
Poitou-Charentes	38%
Provence-Alpes-Côte d'Azur	67%
Rhône-Alpes	108%

Source: Compiled by the author with the data referenced at the beginning of this section.

TABLE 19 FRANCE - ERASMUS+ VET REGIONAL DATA 2016



FRANCE 2016	Budget	% €	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects / 100 K Students	€ / Project	€ / Student	Regional Mobility Efficiency	Inequity	Inequity	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
Alsace	46,872 €	0.2%	12,716	3.0%	2	1%	26,742 €	57%	0.11%	15.73	- €	3.69 €	6%	-3%	3%		2.98%		2.98%	
Aquitaine	1,934,829 €	8.0%	19,765	4.6%	21	9%	673,952 €	35%	2.77%	106.25	92,135 €	98 €	172%	3%	3%	4.64%				
Auvergne	1,202,199 €	4.9%	8,769	2.1%	8	3%	698,977 €	58%	2.88%	91.23	150,275 €	137 €	241%	3%	3%	2.06%		2.06%		
Basse-Normandie	11,038 €	0.0%	9,771	2.3%	1	0%	11,038 €	100%	0.05%	10.23	11,038 €	1 €	2%	-2%	2%		2.29%		2.29%	
Bourgogne	345,576 €	1.4%	12,457	2.9%	6	3%	184,570 €	53%	0.76%	48.17	57,596 €	28 €	49%	-1%	1%		2.92%		2.92%	
Bretagne	1,047,841 €	4.3%	20,289	4.8%	12	5%	360,700 €	34%	1.48%	59.15	87,320 €	52 €	91%	0%	0%		4.76%			
Centre	40,167 €	0.2%	16,299	3.8%	2	1%	26,428 €	66%	0.11%	12.27	20,084 €	2 €	4%	-4%	4%		3.82%		3.82%	
Champagne-Ardenne	838,853 €	3.5%	9,179	2.2%	6	3%	354,386 €	42%	1.46%	65.37	139,809 €	91 €	160%	1%	1%	2.15%				
Corse	- €	0.0%	1,752	0.4%	0	0%	- €	0%	0.00%	0.00	- €	- €	0%	0%	0%		0.41%		0.41%	0.41%
Franche-Comté	101,131 €	0.4%	8,259	1.9%	4	2%	39,827 €	39%	0.16%	48.43	- €	12 €	21%	-2%	2%		1.94%		1.94%	
Haute-Normandie	586,799 €	2.4%	13,297	3.1%	14	6%	170,169 €	29%	0.70%	105.29	41,914 €	44 €	77%	-1%	1%		3.12%			
Île-de-France	8,137,719 €	33.5%	66,981	15.7%	54	23%	1,863,650 €	23%	7.67%	80.62	150,699 €	121 €	213%	18%	18%	15.71%		15.71%		
Languedoc-Roussillon	348,627 €	1.4%	17,377	4.1%	7	3%	135,408 €	39%	0.56%	40.28	49,804 €	20 €	35%	-3%	3%		4.08%		4.08%	
Limousin	63,351 €	0.3%	4,346	1.0%	3	1%	32,986 €	52%	0.14%	69.03	21,117 €	15 €	26%	-1%	1%		1.02%		1.02%	
Lorraine	667,747 €	2.7%	17,041	4.0%	4	2%	390,738 €	59%	1.61%	23.47	166,937 €	39 €	69%	-1%	1%		4.00%			
Midi-Pyrénées	1,583,784 €	6.5%	18,372	4.3%	9	4%	766,330 €	48%	3.15%	48.99	175,976 €	86 €	151%	2%	2%	4.31%				
Nord-Pas-de-Calais	534,567 €	2.2%	29,511	6.9%	3	1%	244,267 €	46%	1.01%	10.17	178,189 €	18 €	32%	-5%	5%		6.92%		6.92%	
Outre-Mer	543,242 €	2.2%	19,459	4.6%	3	1%	248,902 €	46%	1.02%	15.42	181,081 €	28 €	49%	-2%	2%		4.56%		4.56%	
Pays de la Loire	2,250,540 €	9.3%	24,914	5.8%	33	14%	341,272 €	15%	1.40%	132.46	68,198 €	90 €	159%	3%	3%	5.84%				
Picardie	115,532 €	0.5%	13,298	3.1%	5	2%	50,740 €	44%	0.21%	37.60	23,106 €	9 €	15%	-3%	3%		3.12%		3.12%	
Poitou-Charentes	246,573 €	1.0%	11,343	2.7%	7	3%	73,905 €	30%	0.30%	61.71	35,225 €	22 €	38%	-2%	2%		2.66%		2.66%	
Provence-Alpes-Côte d'Azur	1,182,707 €	4.9%	30,945	7.3%	10	4%	800,152 €	68%	3.29%	32.32	118,271 €	38 €	67%	-2%	2%		7.26%			
Rhône-Alpes	2,463,746 €	10.1%	40,180	9.4%	18	8%	635,230 €	26%	2.61%	44.80	136,875 €	61 €	108%	1%	1%	9.42%				
														0.00%	31.65%	44.14%	55.86%	17.77%	36.73%	0.41%

Source: Compiled by the author with the data referenced at the beginning of this section

Regional Mobility Efficiency - RME

Aquitaine, Auvergne, Champagne-Ardenne, Île-de-France, Midi-Pyrénées, Pays de la Loire and Rhône-Alpes are the 7 out of 23 regions where the students could, the whole period of three years, receive more funds than average (RME>100%), highlighting the case of Auvergne which has the highest average RME, 194% (see Table 20).

In the case of Corse, Nord-Pas-de-Calais and the islands of Outre-Mer (3 out of 23 regions) students were always in a bad situation (RME<50%). The students in those regions could access less than half the national average of funds. Important to mention is the low RME of Corse, 9%, as a result of not receiving any funds in 2015 and 2016. Alsace and Franche-Comté were also regions that did not receive any funds in 2015 (see Table 20).

Alsace, Basse-Normandie, Corse, Franche-Comté, Limousin, Outre-Mer, Poitou-Charentes are the 7 out of 23 regions with an, on average, RME lower than 50% (see Table 20).

On average, 46.32 % of the students were located in regions with a RME greater than 100%. This means these VET students had access to more KA102 grants than the national average € /student. 8.15 % of the students study in regions that will receive more than twice this average (RME >200%) (see Table 14).

On average, 53.68 % of the students were located in regions with a RME smaller than 100%. This means these VET students had access to less KA102 grants than the national average € /student (see Table 14).

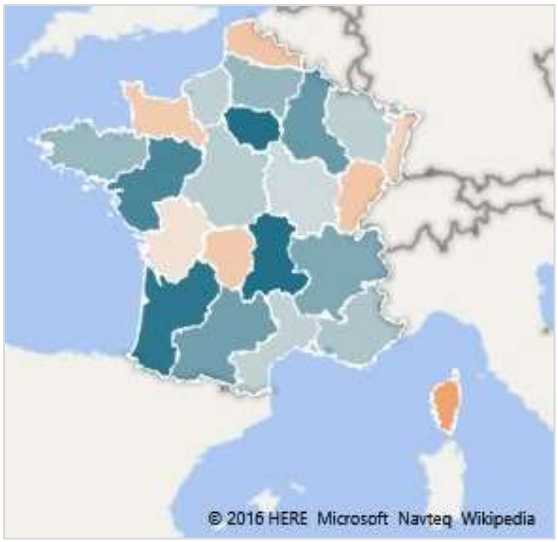
37,4% of the students studied in regions that received less than half of this average (RME <50%) (see Table 14).

TABLE 20 FRANCE - REGIONAL MOBILITY EFFICIENCY RME 2014/2016

Region	2014	2015	2016	Average
Alsace	127%	**0%**	6%	45%
Aquitaine	241%	139%	172%	184%
Auvergne	122%	220%	241%	194%
Basse-Normandie	37%	73%	2%	37%
Bourgogne	54%	50%	49%	51%
Bretagne	45%	116%	91%	84%
Centre	79%	84%	4%	56%
Champagne-Ardenne	119%	108%	160%	129%
Corse	28%	**0%**	**0%**	9%
Franche-Comté	81%	**0%**	21%	34%
Haute-Normandie	43%	35%	77%	52%
Île-de-France	186%	183%	213%	194%
Languedoc-Roussillon	22%	98%	35%	52%
Limousin	64%	18%	26%	36%
Lorraine	42%	48%	69%	53%
Midi-Pyrénées	137%	81%	151%	123%
Nord-Pas-de-Calais	30%	37%	32%	33%
Outre-Mer	36%	24%	49%	36%
Pays de la Loire	169%	150%	159%	159%
Picardie	86%	157%	15%	86%
Poitou-Charentes	59%	48%	38%	49%
Provence-Alpes-Côte d'Azur	41%	90%	67%	66%
Rhône-Alpes	108%	108%	108%	108%

Source: Compiled by the author with the data referenced at the beginning of this section.

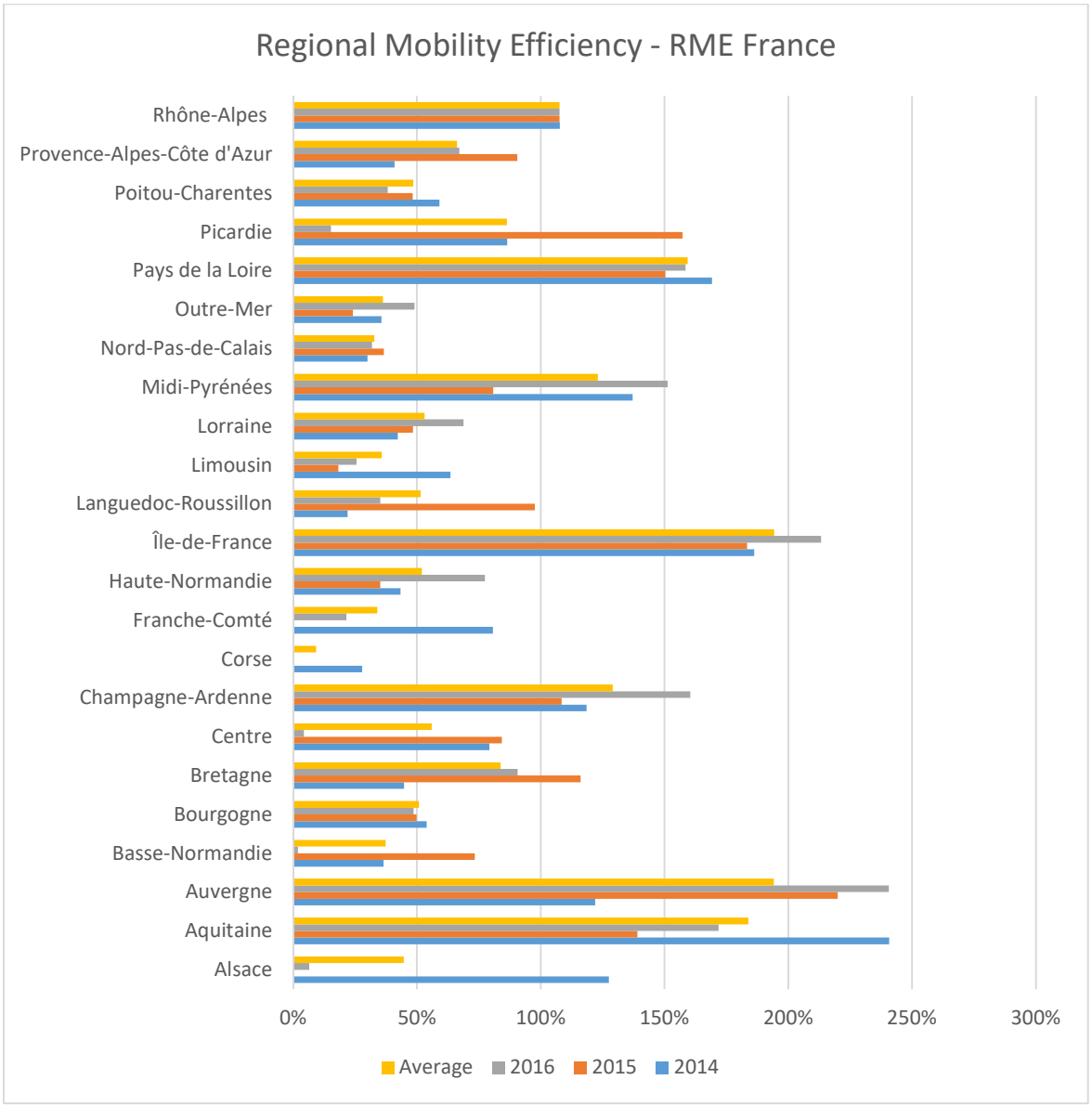
FIGURE 11 FRANCE- AVERAGE RME 2014/2016



NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Source: Compiled by the author with the data referenced at the beginning of this section

FIGURE 12 FRANCE - REGIONAL MOBILITY EFFICIENCY RME 2014/2016



Source: Compiled by the author with the data referenced at the beginning of this section.

6.2 Germany

6.2.1 Indicators and benchmarks

In 2014, 3,863,645 upper secondary students studied in Vocational Education and Training programmes in Germany (STATISTIK-PORTAL, 2015). According to Eurostat, 48.3% of the students enrolled in upper secondary education during 2012 were attending vocational programmes (UOE data collection on education systems, date of extraction, 30.5.2014).

Also according to Eurostat (General government expenditure by function -COFOG- database), General government expenditure on education as a share of GDP has remained stable since 2009. It was 4.3% in 2013, below the EU28 average of 5.0%.

The Education and Training Monitor 2015 – Germany (EUROPEAN COMMISSION, 2015 DE, p. 3) mentions:

> *Total public and private expenditure on educational institutions of 5.1% of GDP was also well below the OECD average of 6.1% (OECD 2014a). Public expenditure on education as a percentage of all government spending is slowly increasing. Demographic trends have an impact on educational spending. The lower proportion of younger people in the population in principle implies lower expenditure needs, while the high proportion of older teachers drives spending up*
>
> (INSTITUT DER DEUTSCHEN WIRTSCHAFT, 2014).

Although the participation of students in the dual VET programmes is high, the interest in vocational programmes is slightly decreasing:

> *While participation of upper secondary education students in vocational education and training (VET) in Germany is slightly below the EU average (47.5 % compared with 48.9% in 2013), the proportion of students in initial VET programmes enrolled in programmes combining in-company and school-based learning (dual VET) is far above the EU average (88.2% compared with 27%).*
>
> *This contributes to the high employment rate of those who have recently completed their education at ISCED levels 3-4 (87.7% compared with an EU average of 70.8%). Nonetheless, demographic change and the increasing attractiveness of*

higher education are making it increasingly difficult to recruit a sufficient number of apprentices in some regions and sectors.

The increasing number of unoccupied apprenticeship places and lack of qualified personnel coincides with the high unemployment risk of early leavers, drop-outs and learners with poor performance (CEDEFOP, 2014 DE). *While the number of people who are searching, but cannot find an apprenticeship place is decreasing, their share (13.5% at the start of the 2014-15 training cycle) is still considered relatively high* (BUNDESINSTITUT FÜR BERUFSBILDUNG, 2015, p. 20)*; see also* (DGB, 2014).

[..]

The 'Education pathways' initiative (Bildungsketten) is being expanded to strengthen counselling and coaching. Since March 2015 full-time, 'career-start' advisors have provided individual support to young people with difficulties achieving a school-leaving certificate and finding a way into vocational education and training. Funding, including from the European Social Fund, has been secured up until the 2018/19 school year.

To facilitate the integration into the education system and the labour market of recently arrived refugees, the federal government announced measures to speed up the recognition of professional qualifications and skills and to further develop the required methods and tools.

Refugees with an apprenticeship, but unclear legal status, will get a guarantee that they will be allowed to stay in Germany until the end of the education and training they started (BMBF, 2015).

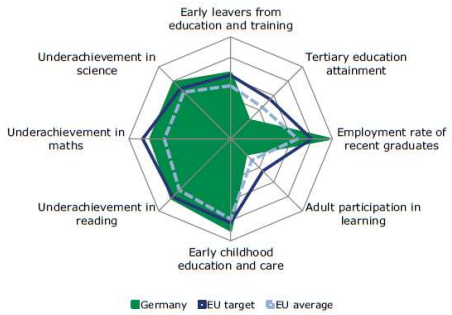
(EUROPEAN COMMISSION, 2015 DE, p. 8).

FIGURE 13 GERMANY - KEY INDICATORS AND BENCHMARKS

			Germany		EU average	
			2011	2014	2011	2014
Educational poverty and spending cuts: challenges for the education sector						
Share of 15 year-olds with underachievement in:	Reading	•	:	14.5% [12]	:	17.8% [12]
	Maths	•	:	17.7% [12]	:	22.1% [12]
	Science	•	:	12.2% [12]	:	16.6% [12]
Education investment	Public expenditure on education as a percentage of GDP		4.3%	4.3% [13]	5.1%	5.0% [13]
	Public expenditure on education as a share of total public expenditure		9.7%	9.7% [13]	10.5%	10.3% [13]
Education attainment levels of young people across Europe						
Early leavers from education and training (age 18-24)	Men		12.5%	10.0% [u]	15.2%	12.7%
	Women		10.7%	8.9% [u]	11.5%	9.5%
	Total	•	11.6%	9.5% [u]	13.4%	11.1%
Tertiary education attainment (age 30-34)	Men		29.9%	32.0%	31.0%	33.6%
	Women		31.3%	30.8%	38.7%	42.3%
	Total	•	30.6%	31.4%	34.8%	37.9%
Policy levers for inclusiveness, quality and relevance						
Early childhood education and care (participation from age 4 to starting age of compulsory education)		•	96.4%	97.0% [13]	93.2%	93.9% [13]
Teachers' participation in training	Any topic (total)		:	: [13]	:	84.6% [13]
	Special needs education		:	: [13]	:	32.4% [13]
	Multicultural settings		:	: [13]	:	13.2% [13]
	ICT skills for teaching		:	: [13]	:	51.0% [13]
Foreign language learning	Share of ISCED 2 students learning two or more foreign languages		:	: [12]	63.0%	: [12]
Share of ISCED 3 students in vocational education and training (VET)			48.6%	47.5% [13]	50.4%	48.9% [13]
Employment rate of recent graduates by education attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4		84.6%	87.7%	71.3%	70.8%
	ISCED 5-8		94.2%	93.1%	82.5%	80.5%
	ISCED 3-8 (total)	•	88.3%	90.0%	77.1%	76.1%
Learning mobility	Inbound graduates mobility (bachelor)		:	3.3% [13]	:	: [13]
	Inbound graduates mobility (master)		:	10.0% [13]	:	: [13]
Adult participation in lifelong learning (age 25-64)	ISCED 0-8 (total)	•	7.8%	7.9%	8.9%	10.7%

Sources: Eurostat (LFS, UOE, GFS); OECD (PISA, TALIS). Notes: • ET 2020 benchmark; data refer to weighted EU average, covering a different number of Member States depending on the source; b= break in time series, d= definition differs, p= provisional, u= low reliability, [12]= 2012, [13]= 2013. *On tertiary education attainment, Germany includes post-secondary education (ISCED 4) in the measurement of progress towards its national Europe 2020 target. When included, Germany has reached its 42% national target. Further information is found in the respective section of Volume 1 (ec.europa.eu/education/monitor).

Figure 1. Position in relation to highest (outer ring) and lowest performers (centre)



Source: DG Education and Culture calculations, based on data from Eurostat (LFS 2014 and UOE 2013) and OECD (PISA 2012, TALIS 2013). *Note:* all scores are set between a maximum (the highest performers visualised by the outer ring) and a minimum (the lowest performers visualised by the centre of the figure).

Source: (EUROPEAN COMMISSION, 2015 DE, p. 2) .

6.2.2 VET Studies and certificates

As mentioned in the report "Spotlight on VET-GERMANY" (CEDEFOP, 2014 DE), the German system brings together the companies, the students, the social stakeholders and the administrations.

The companies arrange training contracts directly with the students and take into account the vocational training regulations. These regulations guarantee national standards, but they also permit the flexibility to adapt the training plans to the needs of the companies. The enterprises bear the costs of in-company training and pay the apprentice a remuneration regulated by collective agreements. Learning at vocational school is based on a curriculum framework that is aligned to the training regulations of every profession. The chambers of commerce are responsible for holding the examinations.

Training regulations are revised every few years to take into account the technological and social changes in the labour market. The initiative for updating or developing an entirely new occupational profile comes from the social stakeholders and/or the *Bundesinstitut für Berufsbildung - BIBB* (Federal Institute for Vocational Education and Training). After consulting all the stakeholders involved, the federal ministry decides together with the *Länderregierungen* (Federal governments) at the *Kultusministerkonferenz - KMK* (Conference of the Ministers of Education and Cultural Affairs) the actions to be taken.

Cooperation between the social partners (employers´ organisations, trade unions and employees´ organisations) and the government is a core element of VET in Germany. Dialogue between the stakeholders is key to achieving the acceptation of VET reforms.

Advanced vocational training leading to qualifications such as master craftsperson certificates (EQF level 6, i.e. the same level as bachelor degrees) confer the right to exercise a

trade independently, to hire and train apprentices and to enter higher education. It also supports acquisition of middle management qualifications in companies.

The duration of compulsory general education is nine years (10 years in five of the *Länder*, Regions).

The comparative low rate of youth unemployment in Germany, 15% in 2005, can be attributed primarily to the high quality of initial vocational training (CEDEFOP, 2014 DE).

Vocational education and training in Germany can be found in various types of schools and the studies vary depending on the path chosen by the student. The different *Länder* (Regions) have also slightly different education systems.

The mission of the *Kultusministerkonferenz – KMK* (Conference of the Ministers of Education and Cultural Affairs) is to establish basic guidelines for the whole of the nation and, thus, the small differences that can be found in the different *Länder* do not prevent the students from getting their certifications acknowledged across the country.

The document "The Education System in the Federal Republic of Germany 2011/2012" (KMK, 2012) describes in chapter 6 the studies at vocational schools within the upper secondary level that lead to a vocational qualification for skilled work as qualified staff, e.g. in an *anerkannter Ausbildungsberuf* (recognised occupation requiring an officially recognised training).

SECONDARY LEVEL II

***Berufsschule*, Professional school**

This school provides the students the technical and general knowledge in the dual system framework. The students spend most of the time training in companies and attend these schools as part of their studies.

***Berufsfachschulen*, Technical professional school**

These schools provide an introduction to one or several professions. During 1 to 3 years, students also receive courses to enhance their general education.

***Berufsoberschule*, Higher Professional school**

During 2, 3 or 4 years the students study to achieve a double qualification: the *Fachgebundene Hochschulreife* (upper vocational qualification) and the entrance to higher education. To obtain the *Allgemeine Hochschulreife* (upper secondary qualification) the students have to prove their proficiency in a second foreign language.

***Fachoberschule*, Higher technical school**

Students require the *Mittlerer Schulabschluss* (intermediate secondary qualification) to enter. After a, typically, two-year study of theoretical and practical knowledge and skills the students obtain the *Fachhochschulreife* (vocational qualification), higher education entrance qualification for the *Fachhochschule* (Technical university). The *Länder* may also establish a grade 13, grade that enables students to obtain the *Fachgebundene Hochschulreife* (upper vocational qualification) and, under certain conditions, the *Allgemeine Hochschulreife* (upper secondary qualification).

***Berufliches Gymnasium/Fachgymnasium*, Professional/Technical High School**

These high schools offer general upper secondary and vocationally-oriented education, usually leading to the general higher education entrance qualification. Depending on whether they also acquire a vocational qualification, the duration can be three or four years. Entry requirement is the intermediate level certificate (CEDEFOP, 2014 DE).

TERTIARY EDUCATION

The document "The Education System in the Federal Republic of Germany 2011/2012" (KMK, 2012) describes in chapter 7 the VET studies in the higher education tertiary sector.

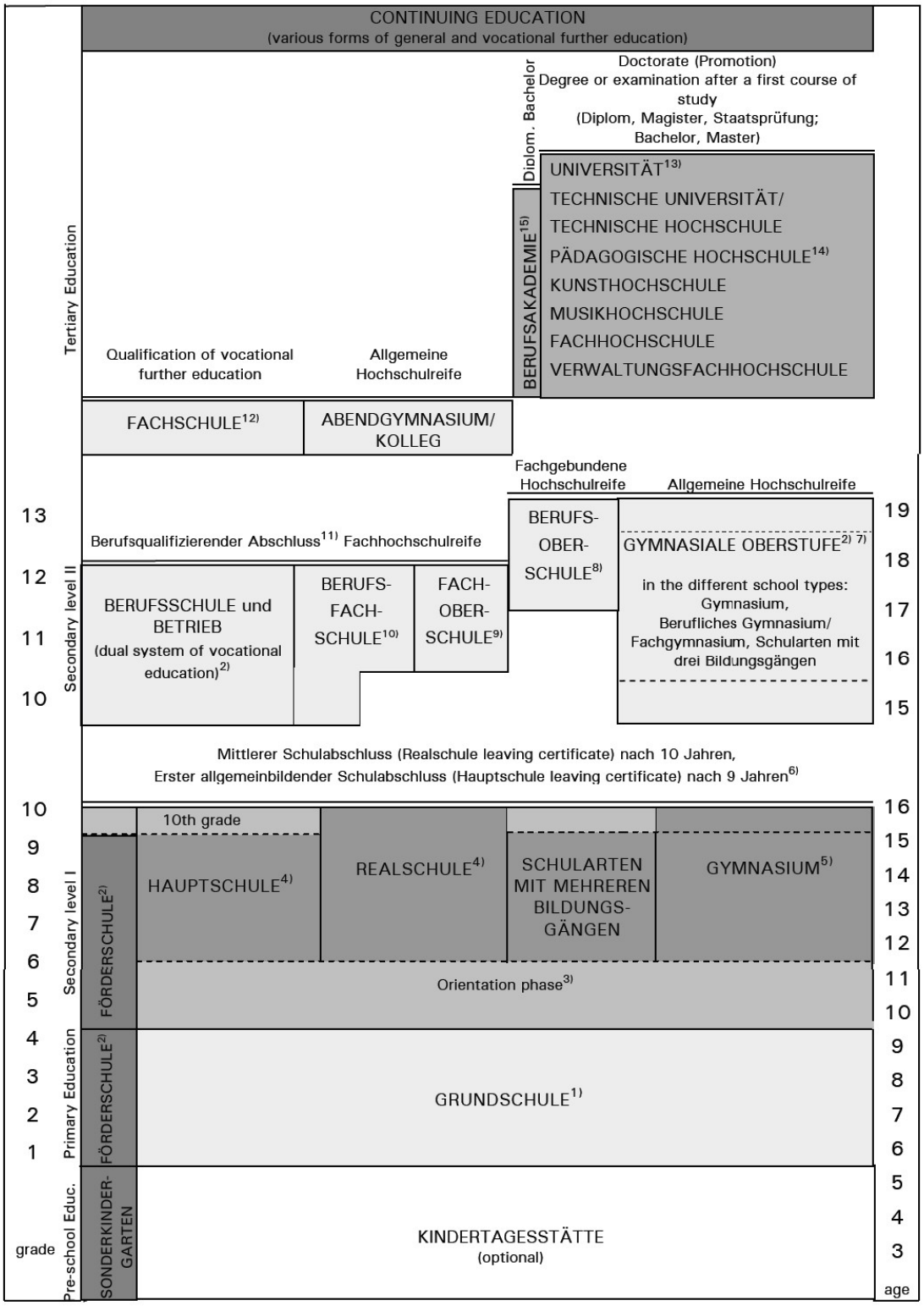
***Fachschulen*, Technical colleges**

These institutions offer career development programmes. Students that complete training at these colleges can act as intermediaries between students and companies in the vocational training studies. Admission requirements vary, but will typically include a recognised qualification in a profession, for example, the *Berufsschule* (Profession´s school) and work experience. In the case of social studies, the requirements generally include the *Mittlerer Schulabschluss* (intermediate secondary qualification) and the completion of a relevant vocational education and training.

***Berufsakademien*, Professional academies**

These dual system studies combine academic training at a *Studienakademie* (study academy) with practical training in a training institution. The students receive a wage from the companies. Admission requirements are a *Hochschulreife* or a *Fachhochschulreife* (general or subject-restricted higher education entrance qualification), depending on the regulations in force in the particular *Land* (Region), and a training contract.

FIGURE 14 THE EDUCATION SYSTEM IN THE FEDERAL REPUBLIC OF GERMANY 2011/2012



Source: (KMK, 2012, pp. 30-32).

Annotations

[..]

1) In some *Länder* special types of transition from early childhood to primary education (*Vorklassen*, *Schulkindergärten*) exist. In Berlin and Brandenburg the primary school comprises six grades.

2) The disabled attend special forms of general-education and vocational school types (partially integrated with non-handicapped pupils) depending on the type of disability in question. Designation of schools varies according to the law of each Land (*Förderschule / Schule für Behinderte / Sonderschule / Förderzentrum*). The *Förderschule* with a focus on "learning" (school for children with learning difficulties, *Schule für Lernbehinderte*) and the *Förderschule* with a focus on "mental development" award school-specific qualifications.

3) Grades 5 and 6 constitute a phase of particular promotion, supervision and orientation with regard to the pupil's future educational path and its particular direction.

4) The *Hauptschule* and *Realschule* courses of education are also offered at schools with two courses of education, for which the names differ from one Land to another. The following types of school bring the courses of education of *Hauptschule* and *Realschule* under one educational and organisational umbrella: *Mittelschule* (Sachsen), *Regelschule* (Thüringen), *Sekundarschule* (Bremen, Sachsen-Anhalt), *Erweiterte Realschule* (Saarland), *Verbundene Haupt- und Realschule* (Hessen), *Haupt- und Realschule* (Hamburg), *Regionale Schule* (Mecklenburg-Vorpommern), *Realschule plus* (Rheinland-Pfalz), *Regionalschule* (Schleswig- Holstein), *Oberschule* (Brandenburg), *Mittelstufenschule* (Hessen).

5) The *Gymnasium* course of education is also offered at schools with three courses of education. The three courses of education of *Hauptschule*, *Realschule* and *Gymnasium* are also offered at the following types of school: Integrierte Gesamtschule, Kooperative *Gesamtschule*, *Integrierte Sekundarschule* (Berlin), *Oberschule* (Bremen, Niedersachsen), *Stadtteilschule* (Hamburg), to some extent *Regionale Schule* (Mecklenburg-Vorpommern), *Gemeinschaftsschule* (Schleswig-Holstein, Thüringen, Saarland).

6) The general education qualifications that may be obtained after grades 9 and 10 carry particular designations in some Länder. These certificates can also be obtained in evening classes and at vocational schools or through an external examination before a state examining board.

7) Admission to the *gymnasiale Oberstufe* requires a formal entrance qualification which can be obtained after grade 9 or 10. Since 2012, in the majority of *Länder* the *Allgemeine Hochschulreife* can be obtained after the successful completion of 12 consecutive school years (eight years at the *Gymnasium*).

8) The *Berufsoberschule* has so far only existed in a few *Länder* and offers school-leavers with the *Mittlerer Schulabschluss* who have completed vocational education and training or five years' working experience the opportunity to obtain the *Fachgebundene Hochschulreife*. Pupils can obtain the *Allgemeine Hochschulreife* by proving their proficiency in a second foreign language.

9) The *Fachoberschule* is a school type lasting for two years (grades 11 and 12) which admits pupils who have completed the *Mittlerer Schulabschluss* and qualifies them to study at a *Fachhochschule*. Pupils who have successfully completed the *Mittlerer Schulabschluss* and have been through initial vocational training can also enter the *Fachoberschule* directly in grade 12. The *Länder* may also establish a grade 13. After successful completion of grade 13, pupils can obtain the *Fachgebundene Hochschulreife* and under certain conditions the *Allgemeine Hochschulreife*.

10) *Berufsfachschulen* are full-time vocational schools differing in terms of entrance requirements, duration and leaving certificates. Basic vocational training can be obtained during one- or two-year courses at *Berufsfachschulen* and a vocational qualification is available at the end of two- or three-year courses. Under certain conditions the *Fachhochschulreife* can be acquired on completion of a course lasting a minimum of two years.

11) Extension courses are offered to enable pupils to acquire qualifications equivalent to the *Hauptschule* and *Realschule* leaving certificates.

12) *Fachschulen* cater for continuing vocational education (1-3 years duration) and as a rule require the completion of relevant vocational education and training in a recognised occupation and subsequent employment. In addition, the *Fachhochschulreife* can be acquired under certain conditions.

13) Including institutions of higher education offering courses in particular disciplines at university level (e.g. theology, philosophy, medicine, administrative sciences, sport).

14) *Pädagogische Hochschulen* (only in Baden-Württemberg) offer training courses for teachers at various types of schools. In specific cases, study courses leading to professions in the area of education and pedagogy outside the school sector are offered as well.

15) The *Berufsakademie* is a tertiary sector institution in some *Länder* offering academic training at a *Studienakademie* (study institution) combined with practical in-company professional training in keeping with the principles of the dual system. As at April 2012

Source: (KMK, 2012, pp. 30-32).

6.2.3 National Qualifications Framework

The German NQF - *Deutscher Qualifikationsrahmen- DQR* started in 2006 with the collaboration of the *Bundesministerium für Bildung und Forschung – BMBF* (Federal Ministry of Education and Research) and the *Kultusministerkonferenz - KMK* (Conference of the Ministers of Education and Cultural Affairs of the Federal Regions).

The *Arbeitskreis DQR* (DQR workgroup) includes stakeholders from higher education, school education, VET, social partners, public institutions from education and the labour market. The decisions are based on consensus.

Four sectors (IT, metal, health and trade) were selected to test the DQR level during the period May-October 2009.

In March 2011, a final agreement was achieved and it includes all the important vocational education and training and higher education qualifications. General education qualifications like the school leaving certificate *Abitur* are still to be included (CEDEFOP, 2014 NQF DE, pp. 102-109).

In November 2012, the *Arbeitskreis DQR* proposed creating a workgroup to include examples from the non-formal sector in the DQR (DQR, 2012) and in December 2012, the *Arbeitskreis DQR* presented the report referencing EQF and the DQR.

The national coordination point – NCP has six members, and includes representatives from the BMBF, the Federal Ministry of Economics and Technology and the KMK.

The *Arbeitskreis DQR* is still active as an advisory institution (AK DQR, 2012) and the *DQR Büro* (DQR office) has been created to provide technical and administrative support.

German education is focusing on learning outcomes and this has an effect on vocational training and higher education (AK DQR, 2012, p. 96) .

In the 1990s, the concept of *Handlungskompetenz* (ability to act) was introduced and is being used to define qualifications. VET regulations and curricula are being developed on a competence basis.

Competence orientation is also part of the transformation in general education and the development of national *Bildungsstandards* (education standards).

The German National Qualification Framework, DQR, has an eight-level structure that matches the EQF.

The concept of *Handlungskompetenz* (ability to act) is at the heart of the level descriptors that describe the competences required to obtain a qualification. The DQR distinguishes between professional and personal competence. The DQR uses the term competence to indicate the proficiency to use knowledge, skills and personal, social and methodological competences in work or study situations and for occupational and personal development.

The far-reaching definitions of the level descriptors facilitate the inclusion of different types of qualifications in each of the levels. This includes the higher education qualifications, which are not restricted by the Bologna process (CEDEFOP, 2012 NQF, pp. 102-109).

At each level, analogous rather than homogeneous qualifications can be assigned. This permits that "alignment takes place in accordance with the principle that each qualification level should always be accessible via various educational pathways" (AK DQR, 2011 A, p. 6).

FIGURE 15 CORRESPONDENCE BETWEEN THE GERMAN NQF/DQR AND THE EQF

DQR levels	Qualifications	EQF levels
8	Doctoral studies	8
7	Master, strategic IT professional (certified)* *Strategischer IT Professional (Geprüfter)*	7
6	Bachelor, commercial specialist (certified) (*Fachkaufmann (Geprüfter)*), business management specialist (certified) (*Fachwirt (Geprüfter)*), master craftsman (certified), *(Meister (Geprüfter))*, operative IT professional (certified)]* (*Operativer IT Professional (Geprüfter)*), Fachschule (State-certified…), *Fachschule ((Staatlich Geprüfter…))*	6
5	IT specialist (certified) (*IT-Spezialist (Zertifizierter)*), service technician (certified)* (*Service-techniker (Geprüfter)*)	5
4	Dual VET (three-year and three-and-a-half-year training courses), full-time vocational school (assistant occupations) (*Berufsfachschule*), full vocational qualification (full-time vocational school) (*Berufsfachschule*)	4
3	Dual VET (two-year training courses), full-time vocational school (general education school leaving certificate obtained on completion of grade 10 at *Realschule* or, under certain circumstances, at other lower secondary school types) (*Berufsfachschule*) *(Mittlerer Schulabschluss)*	3
2	Vocational training preparation (*Berufsausbildungsvorbereitung*), employment agency measures (*Maßnahmen der Arbeitsagentur*), year of pre-vocational training (Berufsvorbereitungsjahr), introductory training for young people (*Einstiegsqualifizierung*), full-time vocational school (*Berufsfachschule*), basic vocational training, (*Berufliche Grundbildung*)	2
1	Vocational training preparation (*Berufsausbildungsvorbereitung*), employment agency measures (vocational preparation schemes) (*Maßnahmen der Arbeitsagentur (Berufsvorbereitende Bildungsmaßnahmen*), year of pre-vocational training (*Berufsvorbereitungsjahr*)	1

(*) The *Arbeitskreis* DQR agreed that additional further vocational training qualifications should be allocated in accordance with the procedures described in the DQR manual.

Source: BMBF and KMK, 2013.

Source : (CEDEFOP, 2014 NQF DE, p. 12).

6.2.4 ECTS and ECVET credit system

The ECTS credit system is already being used in the German Higher Education studies, including the VET studies at EQF level 5:

- *Berufsakademie*
- *Fachschule*

The development of ECVET in Germany is still underway. Most of the VET studies in Germany follow the apprenticeship/dual system model. In only 25 of approximately 350 German VET studies, modules can be found. These modules are *Wahlqualificationen* (electives) that give the student the option to specialise in areas of his future profession (CEDEFOP, 2014 A, p. 66).

The rest of the curricula is mostly input-oriented. The training in companies is thematically structured in skills and knowledge and training regulation for schools is structured in learning fields. Certification and assessment follow the German *Berufskonzept*; skill units are assessed as part of the whole qualification and cannot be certified independently. Only the final qualification is recognised by an official award. The chambers of commerce or the federal authorities recognise this final award (CEDEFOP, 2013 ECVET A, p. 88).

There is no common framework or standardised procedure for the validation of non-formal and informal learning; it depends on the different institutions from the various sectors and requires an examination by an authorised organisation.

Learning outcomes achieved abroad can be validated by the training providers, but students still need to pass a final examination to receive their qualification.

From 2008 to 2015 the *Bundesministerium für Bildung und Forschung – BMBF* (Federal Ministry of Education and Research) funds the 'jobstarter connect' programme. This

programme run by the *Bundesinstitut für Berufsbildung - BIBB* (Federal Institute for Vocational Education and Training) is based on a 'training building block' system. The current 41 projects offer students around the country the possibility to attend these block studies or switch to a standard dual training. Depending on the profession, the studies are divided into at least seven or eight blocks that will be individually certified. Each block is assessed on the basis of competences (CEDEFOP, 2014 A).

From 2007 to 2012 the *Bundesministerium für Bildung und Forschung – BMBF* (Federal Ministry of Education and Research) tested the "European credit system for vocational education and training" within the German vocational education system in the pilot project DECVET (BMBF, 2013).

The DECVET project mentioned, among others, the following points regarding ECVET:

- *Quality assurance plays a crucial role in the systematic assessment, transfer and recognition of units;*
- *It is necessary to have the learning outcomes approach as an integrated part of curricula and training regulations, which means that these need to be structured into units;*
- *ECVET should support transfer of learning outcomes, not enforce it;*
- *Teachers and trainers need additional/special competences to use learning outcomes for teaching and assessing;*
- *ECVET points could be used to give additional information on the qualitative and quantitative weight of units of learning outcomes in relation to full qualification, but they should not be obligatory for the transfer and recognition of the learning outcomes.*

(CEDEFOP, 2013 ECVET A)

The Bund-Länder-Koordinierungsstelle - B-L-KS DQR, (Federal government/Regions coordination point) assumes the functions of the EQF NCP. The *Bundesministerium für Bildung*

und Forschung – BMBF (Federal Ministry of Education and Research) runs bilateral exchange programmes with France, Great Britain, the Netherlands and Norway (Cedefop 2013 ECVETb). Germany has also signed in 2012 a Memorandum of Understanding with Italy to foster mobility of VET students (CEDEFOP, 2013 ECVET A).

6.2.5 EQAVET quality assurance

The State has traditionally been the supervisor of education and training. The *BMBF* assigned in 2008 the *BIBB* the task of setting up the *Deutsche Referenzstelle für Qualitätssicherung in der beruflichen Bildung* - DEQA-VET (National Reference Point for Quality Assurance in Vocational Education and Training).

> *DEQA-VET is part of a European network and has the objective of extending and deepening the exchange of information and experience and boosting sustained collaboration in the area of quality assurance and quality development in vocational education and training. The DEQA-VET's work is aimed not primarily at persons who hold positions of responsibility in the education and training field, but also at organizations, companies and enterprises, which assure quality in their vocational education and training or are working on that.*
>
> (EQAVET Secretariat, 2015 DE A)

Table 99 Germany - EQAVET Indicators, Annexes, (EQAVET Secretariat, 2015 DE B) mentions the German quality indicators. The trends for different output indicators are monitored by the BMBF (CEDEFOP, 2008, p. 158). Many providers in continuing VET already use quality assurance tools (for example ISO9000ff and self-evaluation). There is therefore often an emphasis on voluntary standards. The following institutions are mentioned in Table 99 Germany - EQAVET Indicators : Federal Ministry of Economics and Technology (BMWi), Federal Employment Agency (BA), Institute for Employment Research (IAB) (EQAVET Secretariat, 2015 DE B).

6.2.6 Erasmus+ VET mobility

The German Erasmus+ National Agency, *Nationale Agentur Bildung für Europa beim Bundesinstitut für Berufsbildung*, awarded during the period 2014/2016 Erasmus+ KA102 VET funds to 1,427 projects proposed by 823 different institutions. 21% of these institutions received funds at the calls of the three years. The average amount of projects per institution was 1.73 (see Table 23).

In 2014 the amount of 33,024,172 € in KA 102 grants was distributed to 507 projects, in 2015 the total of 34,248,578 € went to 464 projects and in 2016 the amount of 34,495,436 € was assigned to 456 projects (see Table 21).

83.68% Students with a Fair Access to Funds – SFAF, (see Equation 2) of all the German students had the possibility to benefit, during 2014, from a standard amount of KA 102 grants, RME between 50% and 200% (see Equation 1), 86.7% in 2015, 84.72% in 2016, making an average in the period of SFAF=85.03% (see Table 22).

The National Equity - NE (see Equation 3) determines if the funds have been mathematically equally distributed, meaning NE=100% that all the students had equal chances to receive funds and NE=0% that no students had access to funds. In the case of Germany, the National Equity was 80.89% in 2014, 81.47% in 2015 and 83.89% in 2016. The average value for the period was NE=82.08% (see Table 22).

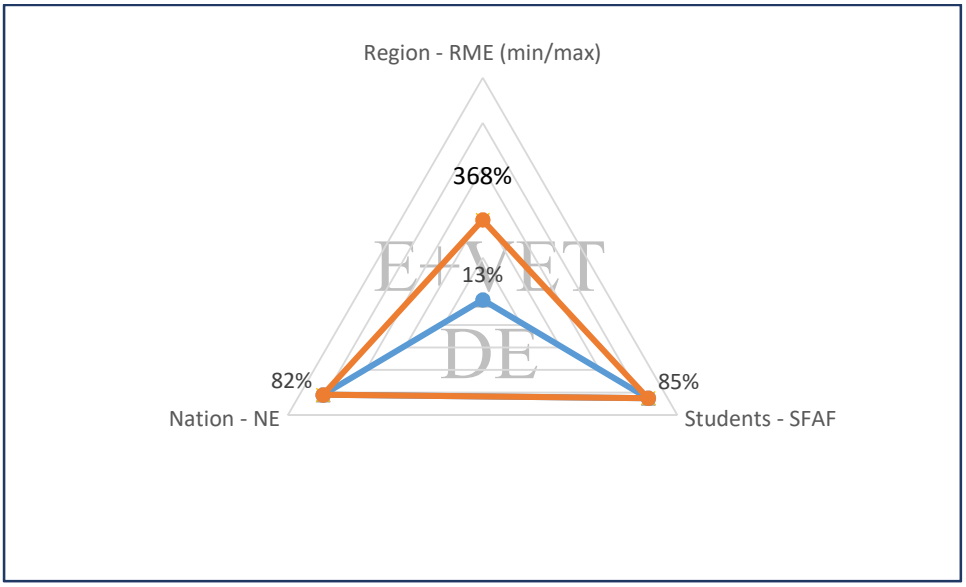
On average, during the whole period the amount received per project was 71,532 € and each of the most frequent-sized projects received 0,1% of the total national budget. There were on average 39% of these frequent-sized projects that received the last 19% of the national budget (see Table 21).

The first 20% of the national budget was awarded to the 13.3 (on average) biggest projects. These projects represent 2.8 % of all the projects (see Table 21).

The first 50% of the national budget was awarded to the 80 (on average) biggest projects. These projects represent 16.8 % of all the projects (see Table 21).

During the period 2014-2016 the region of Brandenburg had the maximum Regional Mobility Efficiency, RME=368% and Saarland the minimum, RME=13% (see Table 27).

FIGURE 16 GERMANY- REGIONAL, STUDENTS´AND NATIONAL 2014/2016 AVERAGE VALUES



Source: Compiled by the author with data from Table 22 and Table 27 (RME values presented 10 times smaller).

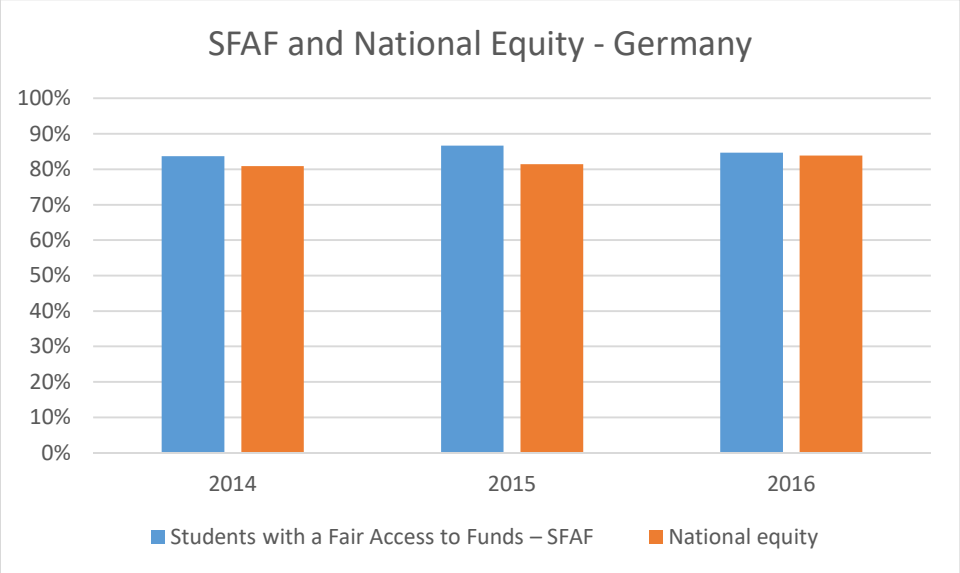
The funding data of years 2014, 2015 and 2016 was provided by the German Erasmus+ National Agency, *Nationale Agentur Bildung für Europa beim Bundesinstitut für Berufsbildung* (NA BIBB, 2016). The information about the amount of students in each region was provided by (STATISTIK-PORTAL, 2015). This data was used to perform the estimations and create the graphs available in this section and section 7.4.

TABLE 21 GERMANY - MONITORING ERASMUS+ VET 2014/2016

	2014	2015	2016	Average
National budget	33,024,172 €	34,248,578 €	34,495,436 €	33,922,729 €
Number of projects	507	464	456	475.67
Biggest Project	1,027,676 €	1,113,195 €	1,300,270 €	1,147,047 €
Smallest Project	1,521 €	1,637 €	3,571 €	2,243 €
Average Project	65,136 €	73,812 €	75,648 €	71,532 €
Projects / Region	31.69	29.00	28.50	29.73
€/ Region	2,064,011 €	2,140,536 €	2,155,965 €	2,120,171 €
Amount of projects that represent 20% of the budget	13	14	13	13.3
… percentage of nations total	2.6%	3.0%	2.9%	2.8%
Amount of projects that represent 50% of the budget	83	78	79	80.0
… percentage of nations total	16.4%	16.8%	17.3%	16.8%
Most frequent size, in % of national budget	0.1%	0.1%	0.1%	0.1%
amount of frequent size projects	198	186	179	188
amount of frequent size projects, % over total	39%	40%	39%	39%
… and represent % of the total budget	20%	19%	18%	19%
Students in regions with more than the national average budget	23.35%	23.35%	35.60%	27.43%
Students in regions with less than the national average budget	76.65%	76.65%	64.40%	72.57%
Students in regions with more than double the national average budget	6.90%	5.57%	6.90%	6.45%
Students in regions with less than half the national average budget	9.43%	7.73%	8.38%	8.51%
Students in regions with no access to funds	0.00%	0.00%	0.00%	0.00%
Students with a Fair Access to Funds – SFAF	**83.68%**	**86.70%**	**84.72%**	**85.03%**
National Equity	**80.89%**	**81.47%**	**83.89%**	**82.08%**
Regions	16	16	16	16
Regions with biggest project greater than 30%	6	6	7	6.3
… percentage of nations total	38%	38%	44%	40%
Regions with biggest project greater than 50%	3	3	2	2.7
… percentage of nations total	19%	19%	13%	17%
Institutions that have always received funds (2014/2016)				21%
Average projects per institution (2014/2016)				1.73

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 17 GERMANY - SFAF AND NATIONAL EQUITY 2014/2016



Source: Compiled by the author with the data referenced at the beginning of this section.

TABLE 22 GERMANY - SFAF AND NATIONAL EQUITY 2014/2016

	2014	2015	2016	Average
Students with a Fair Access to Funds – SFAF	54%	75%	85%	72%
National Equity	70%	80%	82%	77%

Source: Compiled by the author with the data referenced at the beginning of this section.

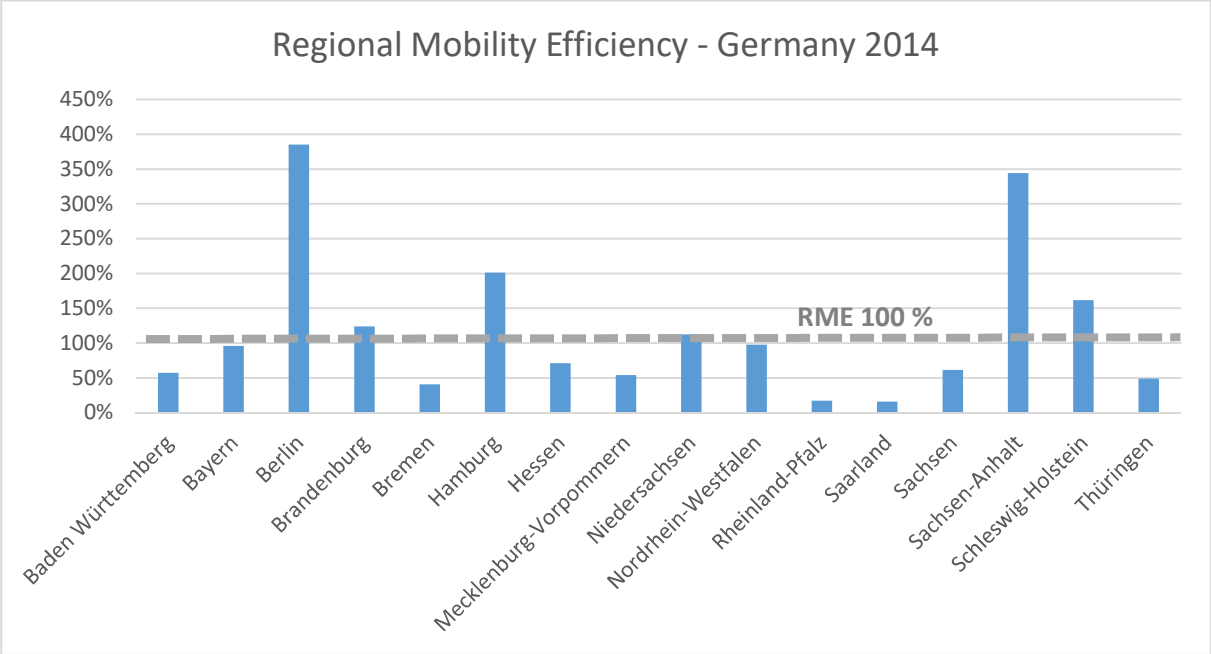
TABLE 23 GERMANY - TIMES AN INSTITUTION HAS BEEN FUNDED 2014/2016

	Times an institution has been funded 2014/2016						
Region	Once	Twice	Always	Always (% of regional institutions)	Institutions in the region	Institutions from national total	Regional regularity
Baden Württemberg	63	34	21	18%	118	14%	1.24
Bayern	94	55	30	17%	179	22%	0.77
Berlin	21	13	10	23%	44	5%	4.25
Brandenburg	6	5	8	42%	19	2%	18.24
Bremen	9	2	2	15%	13	2%	9.74
Hamburg	16	1	4	19%	21	3%	7.46
Hessen	27	14	13	24%	54	7%	3.67
Mecklenburg-Vorpommern	2	3	2	29%	7	1%	33.59
Niedersachsen	52	36	17	16%	105	13%	1.27
Nordrhein-Westfalen	55	60	45	28%	160	19%	1.45
Rheinland-Pfalz	16	3	3	14%	22	3%	5.10
Saarland	1	2	0	0%	3	0%	0.00
Sachsen	16	6	4	15%	26	3%	4.87
Sachsen-Anhalt	7	5	3	20%	15	2%	10.97
Schleswig-Holstein	3	10	10	43%	23	3%	15.56
Thüringen	7	3	4	29%	14	2%	16.80
Total institutions	395	252	176	21%	823	100%	0.21
Total projects	395	504	528		1427		

Source: Compiled by the author with the data referenced at the beginning of this section. The regional regularity is the percentage of regional institutions that have always received funds divided by the percentage of regional institutions from the national total.

During the period 2014/2016, 176 out of 823 institutions were funded each of the three years. In the cases of Brandenburg and Schleswig-Holstein 42% and 43% of their institutions were funded always. Mecklenburg-Vorpommern had 1% of all the funded institutions and, as 29% of its institutions always received funds, this region has the greatest Regional regularity, 33.59. Saarland, with no institutions receiving funds always, and Bayern, with the greatest amount of institutions have the lowest Regional regularities, 0 and 0.77.

FIGURE 18 GERMANY - ERASMUS+ VET RME 2014



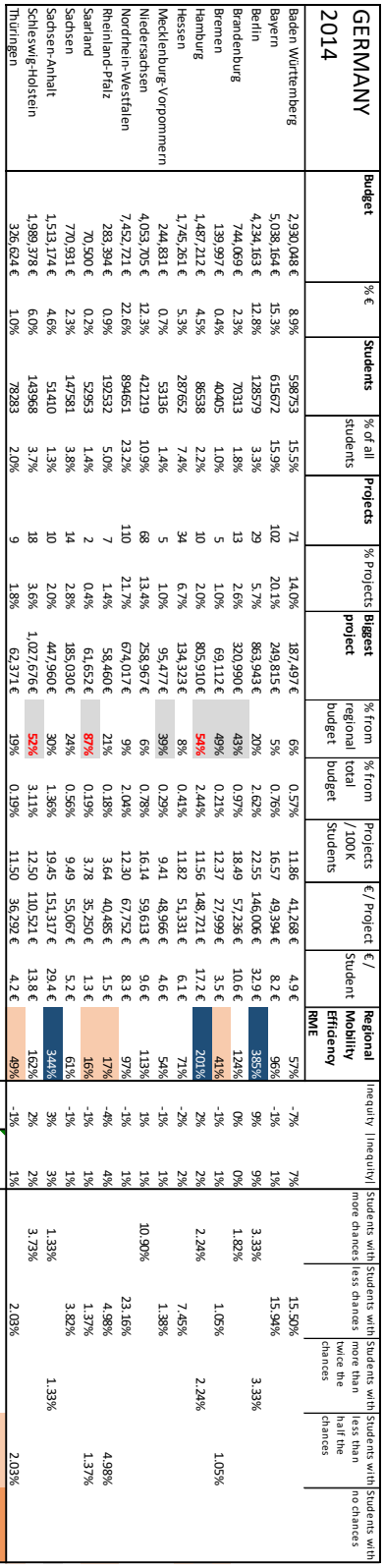
Region	RME 2014
Baden Württemberg	57%
Bayern	96%
Berlin	385%
Brandenburg	124%
Bremen	41%
Hamburg	201%
Hessen	71%
Mecklenburg-Vorpommern	54%
Niedersachsen	113%
Nordrhein-Westfalen	97%
Rheinland-Pfalz	17%
Saarland	16%
Sachsen	61%
Sachsen-Anhalt	344%
Schleswig-Holstein	162%
Thüringen	49%

NOTE:

Blue represents high RME values, greater than 50% Orange represents low RME values, lower than 50%

Source: Compiled by the author with the data referenced at the beginning of this section.

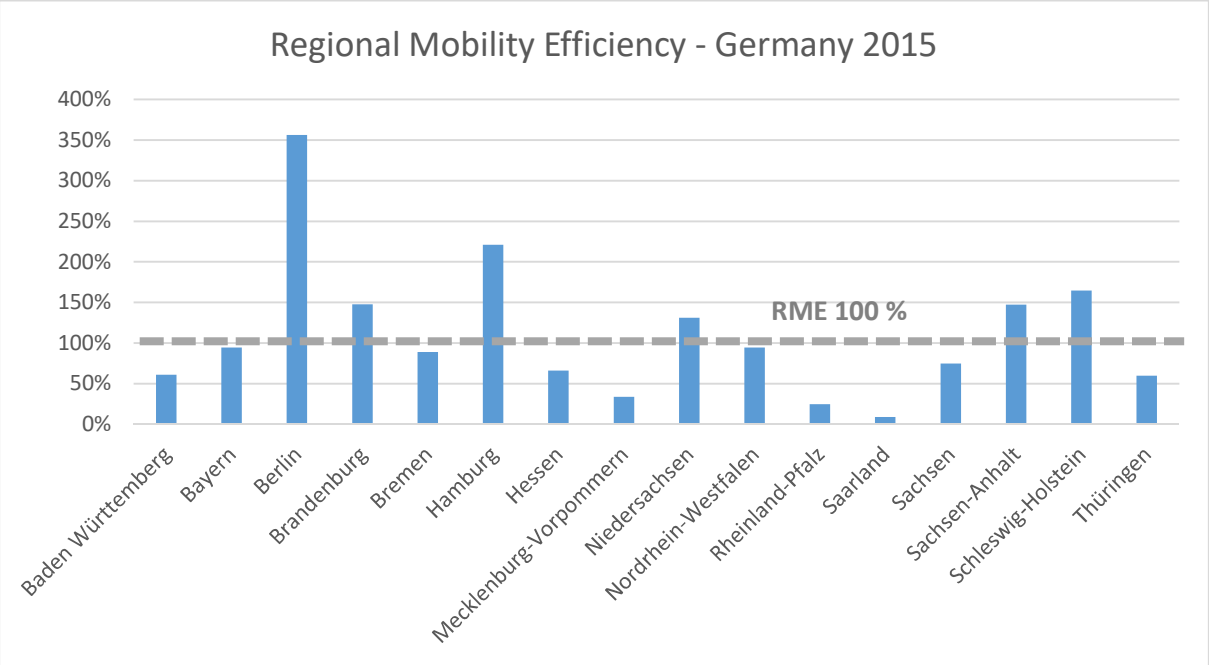
TABLE 24 GERMANY - ERASMUS+ VET REGIONAL DATA 2014



GERMANY 2014	Budget	% €	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects / 100K Students	€/ Project	€/ Student	Regional Mobility Efficiency RME	Inequity	Inequity	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
Baden Württemberg	2,930,048 €	8.9%	598753	15.5%	71	14.0%	187,497 €	6%	0.57%	11.86	41,268 €	4.9 €	57%	-7%	7%					
Bayern	5,038,164 €	15.3%	615672	15.9%	102	20.1%	249,815 €	5%	0.76%	16.57	49,394 €	8.2 €	96%	-1%	1%		15.50%			
Berlin	4,234,163 €	12.8%	128579	3.3%	29	5.7%	863,943 €	20%	2.62%	22.55	146,006 €	32.9 €	385%	9%	9%	3.33%	15.94%			
Brandenburg	744,069 €	2.3%	70313	1.8%	13	2.6%	320,990 €	43%	0.97%	18.49	57,236 €	10.6 €	124%	0%	0%	1.82%		3.33%		
Bremen	139,997 €	0.4%	40405	1.0%	5	1.0%	69,112 €	49%	0.21%	12.37	27,999 €	3.5 €	41%	-1%	1%		1.05%		1.05%	
Hamburg	1,487,212 €	4.5%	86538	2.2%	10	2.0%	805,910 €	54%	2.44%	11.56	148,721 €	17.2 €	201%	2%	2%	2.24%		2.24%		
Hessen	1,745,261 €	5.3%	287652	7.4%	34	6.7%	134,323 €	8%	0.41%	11.82	51,331 €	6.1 €	71%	-2%	2%		7.45%			
Mecklenburg-Vorpommern	244,831 €	0.7%	53136	1.4%	5	1.0%	95,477 €	39%	0.29%	9.41	48,966 €	4.6 €	54%	-1%	1%		1.38%			
Niedersachsen	4,053,705 €	12.3%	421219	10.9%	68	13.4%	258,967 €	6%	0.78%	16.14	59,613 €	9.6 €	113%	1%	1%	10.90%				
Nordrhein-Westfalen	7,452,721 €	22.6%	894651	23.2%	110	21.7%	674,017 €	9%	2.04%	12.30	67,752 €	8.3 €	97%	-1%	1%		23.16%			
Rheinland-Pfalz	283,394 €	0.9%	192532	5.0%	7	1.4%	58,460 €	21%	0.18%	3.64	40,485 €	1.5 €	17%	-4%	4%		4.98%		4.98%	
Saarland	70,500 €	0.2%	52953	1.4%	2	0.4%	61,652 €	87%	0.19%	3.78	35,250 €	1.3 €	16%	-1%	1%		1.37%		1.37%	
Sachsen	770,931 €	2.3%	147581	3.8%	14	2.8%	185,030 €	24%	0.56%	9.49	55,067 €	5.2 €	61%	-1%	1%		3.82%			
Sachsen-Anhalt	1,513,174 €	4.6%	51410	1.3%	10	2.0%	447,960 €	30%	1.36%	19.45	151,317 €	29.4 €	344%	3%	3%	1.33%		1.33%		
Schleswig-Holstein	1,989,378 €	6.0%	143968	3.7%	18	3.6%	1,027,676 €	52%	3.11%	12.50	110,521 €	13.8 €	162%	2%	2%	3.73%				
Thüringen	326,624 €	1.0%	78283	2.0%	9	1.8%	62,371 €	19%	0.19%	11.50	36,292 €	4.2 €	49%	-1%	1%		2.03%		2.03%	
														0.00%	19.11%	23.35%	76.65%	6.90%	9.43%	0.00%

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 19 GERMANY - ERASMUS+ VET RME 2015



Region	RME 2015
Baden Württemberg	61%
Bayern	94%
Berlin	356%
Brandenburg	148%
Bremen	89%
Hamburg	221%
Hessen	66%
Mecklenburg-Vorpommern	34%
Niedersachsen	131%
Nordrhein-Westfalen	95%
Rheinland-Pfalz	25%
Saarland	9%
Sachsen	75%
Sachsen-Anhalt	147%
Schleswig-Holstein	165%
Thüringen	60%

NOTE:

Blue represents high RME values, greater than 50% Orange represents low RME values, lower than 50%

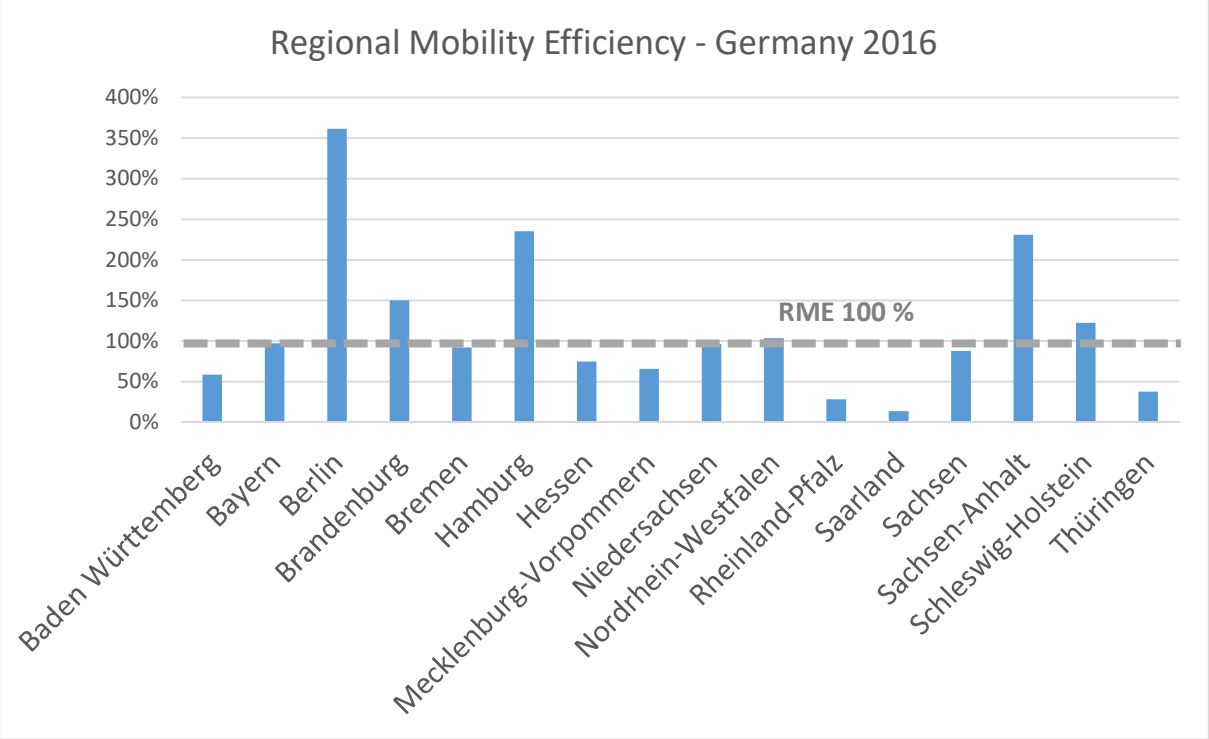
Source: Compiled by the author with the data referenced at the beginning of this section.

TABLE 25 GERMANY - ERASMUS+ VET REGIONAL DATA 2015

GERMANY 2015	Budget	% €	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects / 100 K Students	€ / Project	€ / Student	Regional Mobility Efficiency RME	Inequity	Inequity	Students with more chances	Students with less chances	Students with twice the chances	Students with less than half the chances	Students with no chances
Baden Württemberg	3,238,484 €	9.5%	598,753	15.5%	62	13.4%	247,054 €	8%	0.72%	10.35	52,234 €	5.4 €	61%	-6%	6%		15.50%			
Bayern	5,152,149 €	15.0%	615,672	15.9%	96	20.7%	329,998 €	6%	0.96%	15.59	53,668 €	8.4 €	94%	-1%	1%		15.94%			
Berlin	4,063,255 €	11.9%	128,579	3.3%	25	5.4%	1,113,195 €	27%	3.25%	19.44	162,530 €	31.6 €	356%	9%	9%	3.33%		3.33%		
Brandenburg	919,855 €	2.7%	70,313	1.8%	13	2.8%	305,630 €	33%	0.89%	18.49	70,758 €	13.1 €	148%	1%	1%	1.82%				
Bremen	318,490 €	0.9%	40,405	1.0%	8	1.7%	63,600 €	20%	0.19%	19.80	39,811 €	7.9 €	89%	0%	0%		1.05%			
Hamburg	1,694,867 €	4.9%	86,538	2.2%	9	1.9%	895,424 €	53%	2.61%	10.40	188,319 €	19.6 €	221%	3%	3%	2.24%		2.24%		
Hessen	1,686,922 €	4.9%	287,652	7.4%	29	6.3%	249,026 €	15%	0.73%	10.08	58,170 €	5.9 €	66%	-3%	3%		7.45%			
Mecklenburg-Vorpommern	158,666 €	0.5%	53,136	1.4%	3	0.6%	95,775 €	60%	0.28%	5.65	52,889 €	3.0 €	34%	-1%	1%		1.38%		1.38%	
Niedersachsen	4,890,571 €	14.3%	421,219	10.9%	59	12.7%	458,032 €	9%	1.34%	14.01	82,891 €	11.6 €	131%	3%	3%	10.90%				
Nordrhein-Westfalen	7,500,319 €	21.9%	894,651	23.2%	97	20.9%	569,408 €	8%	1.66%	10.84	77,323 €	8.4 €	95%	-1%	1%		23.16%			
Rheinland-Pfalz	421,139 €	1.2%	192,532	5.0%	12	2.6%	57,762 €	14%	0.17%	6.23	35,095 €	2.2 €	25%	-4%	4%		4.98%		4.98%	
Saarland	40,735 €	0.1%	52,953	1.4%	2	0.4%	31,295 €	77%	0.09%	3.78	20,368 €	0.8 €	9%	-1%	1%		1.37%		1.37%	
Sachsen	976,721 €	2.9%	147,581	3.8%	13	2.8%	201,211 €	21%	0.59%	8.81	75,132 €	6.6 €	75%	-1%	1%		3.82%			
Sachsen-Anhalt	671,854 €	2.0%	51,410	1.3%	9	1.9%	251,990 €	38%	0.74%	17.51	74,650 €	13.1 €	147%	1%	1%	1.33%				
Schleswig-Holstein	2,100,912 €	6.1%	143,968	3.7%	18	3.9%	929,961 €	44%	2.72%	12.50	116,717 €	14.6 €	165%	2%	2%	3.73%				
Thüringen	413,639 €	1.2%	78,283	2.0%	9	1.9%	84,168 €	20%	0.25%	11.50	45,960 €	5.3 €	60%	-1%	1%		2.03%			
														0.00%	18.53%	23.35%	76.65%	5.57%	7.73%	0.00%

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 20 GERMANY - ERASMUS+ VET RME 2016



Region	RME 2016
Baden Württemberg	59%
Bayern	97%
Berlin	361%
Brandenburg	150%
Bremen	92%
Hamburg	235%
Hessen	75%
Mecklenburg-Vorpommern	66%
Niedersachsen	97%
Nordrhein-Westfalen	104%
Rheinland-Pfalz	28%
Saarland	14%
Sachsen	88%
Sachsen-Anhalt	231%
Schleswig-Holstein	123%
Thüringen	38%

NOTE:

Blue represents high RME values, greater than 50% Orange represents low RME values, lower than 50%

Source: Compiled by the author with the data referenced at the beginning of this section.

TABLE 26 GERMANY - ERASMUS+ VET REGIONAL DATA 2016

GERMANY 2016	Budget	% €	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects / 100 K Students	€ / Project	€ / Student	Regional Mobility Efficiency RME	Inequity	Inequity	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
Baden Württember	3,142,326 €	9.1%	598,753	15.5%	61	13.4%	384,530 €	12%	1.11%	10.19	51,514 €	5.2 €	59%	-6%	6%					
Bayern	5,345,648 €	15.5%	615,672	15.9%	96	21.1%	181,895 €	3%	0.53%	15.59	55,684 €	8.7 €	97%	0%	0%		15.50%			
Berlin	4,149,632 €	12.0%	128,579	3.3%	23	5.0%	1,300,270 €	31%	3.77%	17.89	180,419 €	32.3 €	361%	9%	9%	3.33%	15.94%			
Brandenburg	941,637 €	2.7%	70,313	1.8%	14	3.1%	339,790 €	36%	0.99%	19.91	67,260 €	13.4 €	150%	1%	1%	1.82%		3.33%		
Bremen	333,084 €	1.0%	40,405	1.0%	6	1.3%	107,140 €	32%	0.31%	14.85	55,514 €	8.2 €	92%	0%	0%		1.05%			
Hamburg	1,817,446 €	5.3%	86,538	2.2%	11	2.4%	1,124,615 €	62%	3.26%	12.71	165,222 €	21.0 €	235%	3%	3%	2.24%		2.24%		
Hessen	1,922,761 €	5.6%	287,652	7.4%	31	6.8%	303,103 €	16%	0.88%	10.78	62,025 €	6.7 €	75%	-2%	2%		7.45%			
Mecklenburg-Vorpo	312,941 €	0.9%	53,136	1.4%	6	1.3%	94,081 €	30%	0.27%	11.29	52,157 €	5.9 €	66%	0%	0%		1.38%			
Niedersachsen	3,630,726 €	10.5%	421,219	10.9%	48	10.5%	356,849 €	10%	1.03%	11.40	75,640 €	8.6 €	97%	0%	0%		10.90%			
Nordrhein-Westfal	8,292,135 €	24.0%	894,651	23.2%	103	22.6%	490,607 €	6%	1.42%	11.51	80,506 €	9.3 €	104%	1%	1%	23.16%				
Rheinland-Pfalz	485,397 €	1.4%	192,532	5.0%	12	2.6%	70,700 €	15%	0.20%	6.23	40,450 €	2.5 €	28%	-4%	4%		4.98%		4.98%	
Saarland	64,614 €	0.2%	52,953	1.4%	1	0.2%	64,614 €	100%	0.19%	1.89	64,614 €	1.2 €	14%	-1%	1%		1.37%		1.37%	
Sachsen	1,155,937 €	3.4%	147,581	3.8%	13	2.9%	266,950 €	23%	0.77%	8.81	88,918 €	7.8 €	88%	0%	0%		3.82%			
Sachsen-Anhalt	1,060,642 €	3.1%	51,410	1.3%	7	1.5%	283,860 €	27%	0.82%	13.62	151,520 €	20.6 €	231%	2%	2%	1.33%		1.33%		
Schleswig-Holstein	1,575,642 €	4.6%	143,968	3.7%	17	3.7%	653,878 €	41%	1.90%	11.81	92,685 €	10.9 €	123%	1%	1%	3.73%				
Thüringen	264,868 €	0.8%	78,283	2.0%	7	1.5%	65,452 €	25%	0.19%	8.94	37,838 €	3.4 €	38%	-1%	1%		2.03%		2.03%	
														0.00%	16.11%	35.60%	64.40%	6.90%	8.38%	0.00%

Source: Compiled by the author with the data referenced at the beginning of this section.

Regional Mobility Efficiency - RME

Baden Württemberg, Bayern, Berlin, Brandenburg, Hamburg, Hessen, Niedersachsen, Nordrhein-Westfalen, Sachsen, Sachsen-Anhalt and Schleswig-Holstein are the 11 regions (out of 16) where the students could, the whole period of three years, receive more funds than average (RME>100%) (see Table 27).

Significant are the cases of Berlin, Hamburg and Sachsen-Anhalt with average RMEs of 368%, 219% and 241%., bigger than 200%. This means the students in these 3 regions had access to a funding amount that doubled the national average (see Table 27).

Rheiland-Pfalz, Saarland and Thüringen are the 3 out of 16 regions with an, on average, RME lower than 50% (see Table 27).

In the case of Rheinland-Pfalz and Saarland students were always situated in a bad situation (RME<50%). The students in those regions could only access less than half the national average of funds (see Table 27).

On average, 27.43 % of the students were located in regions with an RME greater than 100%. This means these VET students had access to more KA102 grants than the national average € /student. 6.45 % of the students studied in regions that received more than twice this average (RME >200%) (see Table 21).

On average, 72.57 % of the students were located in regions with an RME smaller than 100%. This means these VET students had access to less KA102 grants than the national average € /student (see Table 21).

8,51% of the students studied in regions that received less than half of this average (RME <50%) (see Table 21).

TABLE 27 GERMANY - REGIONAL MOBILITY EFFICIENCY RME 2014/2016

Region	2014	2015	2016	Average
Baden Württemberg	57%	61%	59%	59%
Bayern	96%	94%	97%	96%
Berlin	385%	356%	361%	368%
Brandenburg	124%	148%	150%	140%
Bremen	41%	89%	92%	74%
Hamburg	201%	221%	235%	219%
Hessen	71%	66%	75%	71%
Mecklenburg-Vorpommern	54%	34%	66%	51%
Niedersachsen	113%	131%	97%	113%
Nordrhein-Westfalen	97%	95%	104%	99%
Rheinland-Pfalz	17%	25%	28%	23%
Saarland	16%	9%	14%	13%
Sachsen	61%	75%	88%	75%
Sachsen-Anhalt	344%	147%	231%	241%
Schleswig-Holstein	162%	165%	123%	150%
Thüringen	49%	60%	38%	49%

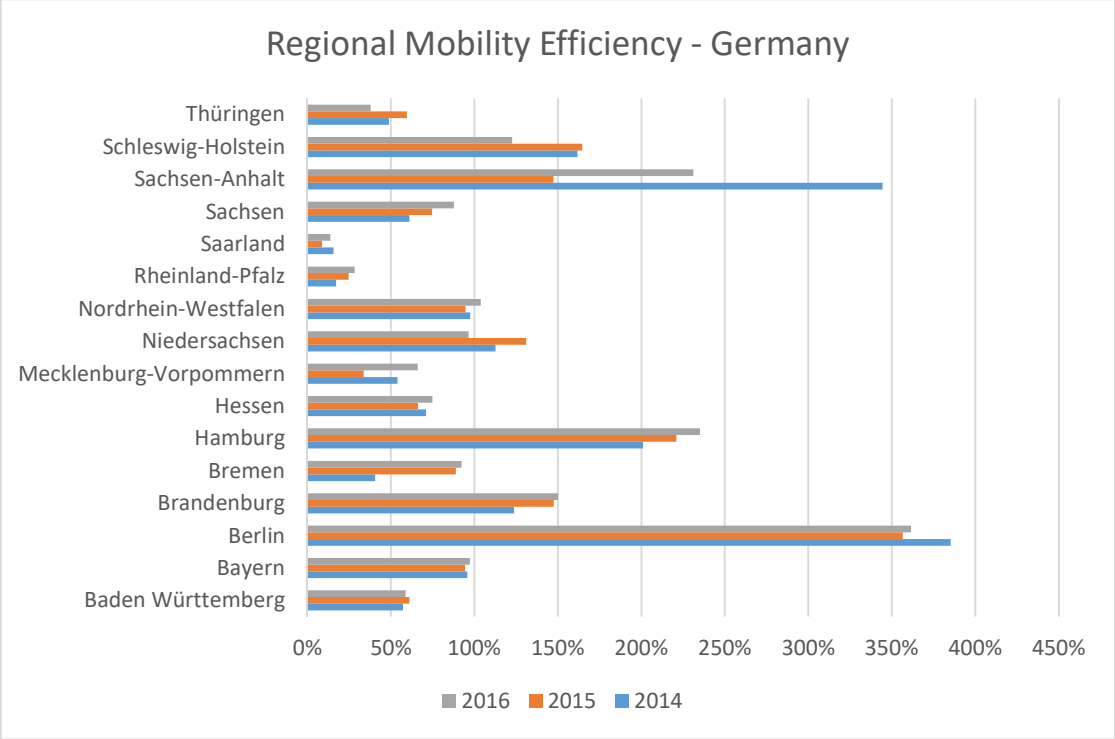
Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 21 GERMANY - AVERAGE RME 2014/2016

Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 22 GERMANY - REGIONAL MOBILITY EFFICIENCY RME 2014/2016



Source: Compiled by the author with the data referenced at the beginning of this section.

6.3 Italy

6.3.1 Indicators and benchmarks

In 2013, 1,506,325 upper secondary students studied in Vocational Education and Training programmes in Italy (ISTAT, 2013). According to Eurostat, 59.2% of the students enrolled in upper secondary education during 2012 were attending vocational programmes (UOE data collection on education systems, date of extraction, 30.5.2014).

Also according to Eurostat (General government expenditure by function -COFOG- database), the general government expenditure on education, both as a proportion of GDP (4.1% in 2013) and as a proportion of total general government expenditure (8.0% in 2013), is among the lowest in the EU. This applies in particular to expenditure on tertiary education, which is the lowest in the EU at only 0.4% of GDP and 0.7% of total general government expenditure in 2013.

The Education and Training Monitor 2015 – Italy mentions:

> *While the participation of upper secondary students in vocational education and training remains above the EU average (59.4% compared with 48.9% in 2013), the employment rate of recent upper secondary graduates is the lowest in the EU (38.3% in 2014). This is partly due to insufficiently developed work-based learning: only 10.7% of upper secondary students participated in traineeships in 2013/14, although this figure has been on an upward trend in the last few years (INDIRE 2014). Italy has the second highest proportion of young people not in education, employment or training in the EU (26.2% of 15-29 year-olds in 2014) after Greece (26.7%). Adult participation in lifelong learning increased by 1.8 percentage points in 2014, but remains below the EU average (8.0% compared with 10.7%, in 2014). This is due to very low participation among people with low educational attainment (2.2% compared with an EU average of 4.4%). The participation rate of adults with medium or high educational attainment levels are in line with the corresponding EU averages.*
>
> *[..], the recent labour market reform aims to overhaul the apprenticeship system. In particular, it enables students to use apprenticeships to gain upper secondary qualifications and simplifies training requirements for apprenticeship contracts.*

> *Italy directly referenced its formal qualifications to the European Qualifications Framework. This includes qualifications awarded by the central level (general education, initial VET and higher education qualifications) and by the regions. Other vocational qualifications awarded at regional level, licences for regulated professions, and private qualifications were not included and will be added at the second stage of referencing. A 2015 state-regions agreement provided for a register of regional vocational qualifications that will become operational in 2016, as part of a national register of education, training and professional qualifications (Repertorio nazionale dei titoli di istruzione e formazione e delle qualifiche professionali), to be developed as a single framework for skills certification.*
>
> (EUROPEAN COMMISSION, 2015 IT, pp. 8-9)

The Education and Training Monitor 2015 – Italy also mentions the guidelines 'La buona scuola' published by the Italian government on 3 September 2014 to foster a comprehensive reform of the school education system:

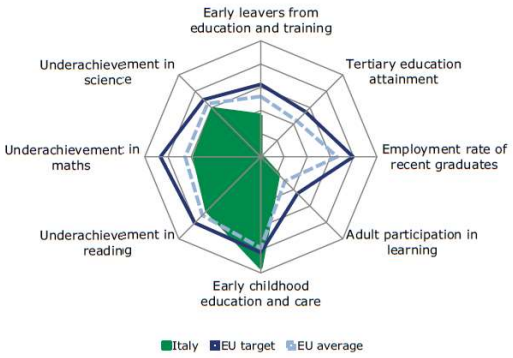
> *The plans were subject to a public consultation from 15 September to 15 November 2014. On 13 March 2015, the Italian government presented the reform as a draft law, which was approved by parliament on 9 July 2015 (Law 107/2015). Projections in the 2015 National Reform Programme suggest that, of all the ongoing reforms in Italy, the school reform is likely to have the largest positive impact on GDP in the long-term*
>
> (MINISTERO DELL'ECONOMIA E DELLE FINANZE, 2015, pp. 110-111)

FIGURE 23 ITALY - KEY INDICATORS AND BENCHMARKS

			Italy		EU average	
			2011	2014	2011	2014
Educational poverty and spending cuts: challenges for the education sector						
Share of 15 year-olds with underachievement in:	Reading	•	:	19.5% [12]	:	17.8% [12]
	Maths	•	:	24.7% [12]	:	22.1% [12]
	Science	•	:	18.7% [12]	:	16.6% [12]
Education investment	Public expenditure on education as a percentage of GDP		4.1%	4.1% [13]	5.1%	5.0% [13]
	Public expenditure on education as a share of total public expenditure		8.3%	8.0% [13]	10.5%	10.3% [13]
Education attainment levels of young people across Europe						
Early leavers from education and training (age 18-24)	Men		20.6%	17.7%	15.2%	12.7%
	Women		14.9%	12.2%	11.5%	9.5%
	Total	•	17.8%	15.0%	13.4%	11.1%
Tertiary education attainment (age 30-34)	Men		15.9%	18.8%	31.0%	33.6%
	Women		24.8%	29.1%	38.7%	42.3%
	Total	•	20.4%	23.9%	34.8%	37.9%
Policy levers for inclusiveness, quality and relevance						
Early childhood education and care (participation from age 4 to starting age of compulsory education)		•	99.1%	98.7% [13]	93.2%	93.9% [13]
Teachers' participation in training	Any topic (total)		:	75.4% [13]	:	84.6% [13]
	Special needs education		:	44.3% [13]	:	32.4% [13]
	Multicultural settings		:	14.9% [13]	:	13.2% [13]
	ICT skills for teaching		:	53.2% [13]	:	51.0% [13]
Foreign language learning	Share of ISCED 2 students learning two or more foreign languages		99.4%	98.8% [12]	63.0%	: [12]
Share of ISCED 3 students in vocational education and training (VET)			60.0%	59.4% [13]	50.4%	48.9% [13]
Employment rate of recent graduates by education attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4		50.6%	38.3%	71.3%	70.8%
	ISCED 5-8		66.2%	52.9%	82.5%	80.5%
	ISCED 3-8 (total)	•	57.7%	45.0%	77.1%	76.1%
Learning mobility	Inbound graduates mobility (bachelor)		:	2.9% [13]	:	: [13]
	Inbound graduates mobility (master)		:	5.1% [13]	:	: [13]
Adult participation in lifelong learning (age 25-64)	ISCED 0-8 (total)	•	5.7%	8.0%	8.9%	10.7%

Sources: Eurostat (LFS, UOE, GFS); OECD (PISA, TALIS). Notes: • ET 2020 benchmark; data refer to weighted EU average, covering a different number of Member States depending on the source; b= break in time series, d= definition differs, p= provisional, u= low reliability, [12]= 2012, [13]= 2013. Further information is found in the respective section of Volume 1 (ec.europa.eu/education/monitor).

Figure 1. Position in relation to highest (outer ring) and lowest performers (centre)



Source: DG Education and Culture calculations, based on data from Eurostat (LFS 2014 and UOE 2013) and OECD (PISA 2012, TALIS 2013). *Note:* all scores are set between a maximum (the highest performers visualised by the outer ring) and a minimum (the lowest performers visualised by the centre of the figure).

Source: (EUROPEAN COMMISSION, 2015 IT, p. 2)

6.3.2 VET studies and certificates

In Italy the state has power over the general rules on education. The regions have legislative power over vocational education, but the state controls the basic issues. Law 3/2001 (18/10/2001) changed Art. 117 of the Constitution stating vocational education training falls under the responsibility of the Regions. Friuli-Venezia Giulia, Sardinia, Sicily, Trentino-Alto Adige, Valle d´Aosta have greater autonomy in education, as well as in other areas. Trento and Bolzano are autonomous provinces of the Trentino-Alto Adige region that have superior autonomy to manage education and vocational training.

Education is compulsory during 10 years, up to the age of 16. To foster qualifications, citizens have the 'right/duty' (*diritto/dovere*) to accomplish at least 12 years before they are 18. The choice between general education and VET is usually made at age 14 (CEDEFOP, 2014 IT).

VET studies managed in the various regions used to be very heterogeneous. To make the wide variety of VET studies offered by the regions more transparent and more flexible, the state-regions conference agreed on minimum education and training standards valid at national level. These standards are linked to the national occupational profiles and the corresponding qualifications and programmes included in the qualifications register created in 2011.

These modifications prevent early leaving, permitting learners to switch between different types of vocational studies and from general education to VET and vice versa.

Social partners are also taken into account to shape the vocational education in general and in particular when deciding over apprenticeships. They promote in-company training programmes, managing specific funds, matching the needs of the companies and trainees.

At the end of 2011, Italy´s economy entered in recession. With a public debt of 120% its GDP unemployment rose to 8,4%. The economic structure is built on mainly small and medium-sized companies. In north Italy, greater industrialisation can be found, lacking infrastructures in the southern areas of the country.

In Italy, VET programmes can be found at upper secondary level, post-secondary level and higher education level (CEDEFOP, 2014 IT):

UPPER SECONDARY LEVEL

***Istituti tecnici, Istituti professionali* (Technical schools, Professional schools)**

At the *Istituti tecnici*, students can learn technical and administrative jobs. At the *Istituti professionali* they get prepared for carrying out qualified tasks in the production industry. These studies combine, during five years, general education and the learning of vocational skills. Once achieved, students can continue to higher education.

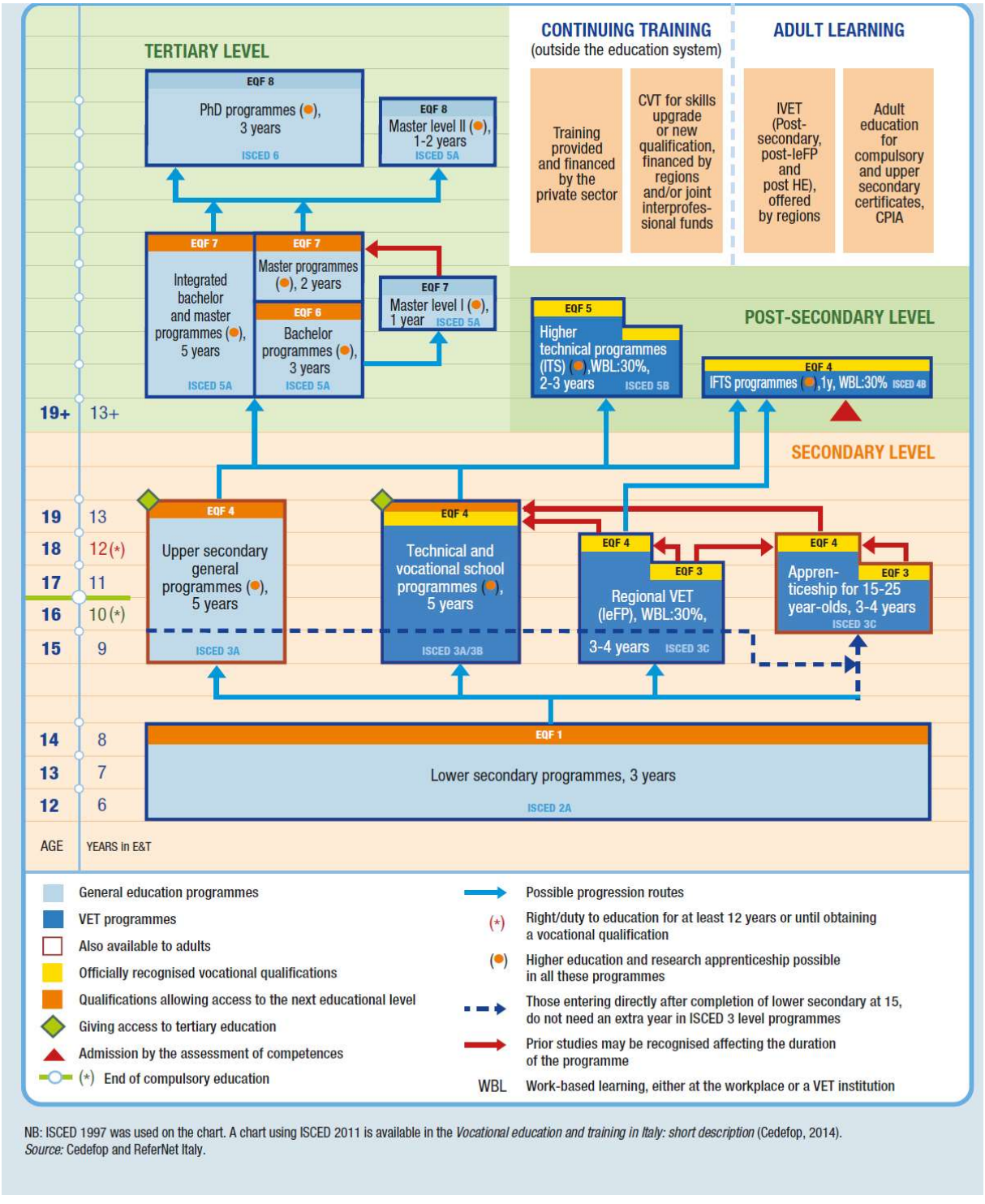
Istruzione e formazione professionale, IeFP

Three to four year modular programmes created by the regions that focus on basic technical skills that include on-the-job training. Credits are used to recognise these studies, enabling learners to change their training areas. Qualifications are recognised nationwide.

Apprenticeship

Three- to four-year apprenticeship-type scheme that includes both on-the-job and classroom training. The minimum entry age is 15.

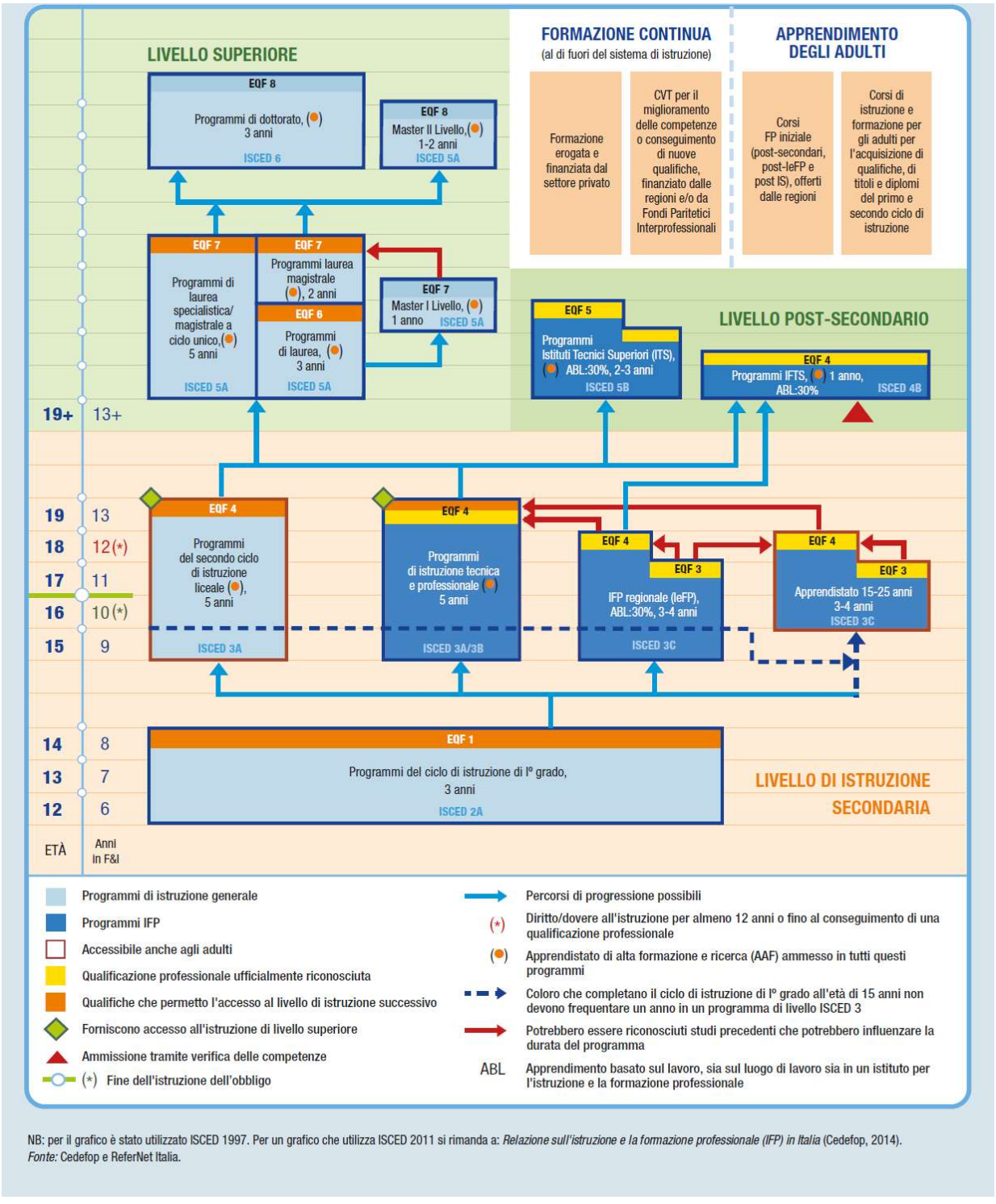
FIGURE 24 VET IN ITALY'S EDUCATION AND TRAINING SYSTEM, ENGLISH VERSION



NB: ISCED 1997 was used on the chart. A chart using ISCED 2011 is available in the *Vocational education and training in Italy: short description* (Cedefop, 2014).
Source: Cedefop and ReferNet Italy.

Source: (CEDEFOP, 2014 IT), English version.

FIGURE 25 VET IN ITALY'S EDUCATION AND TRAINING SYSTEM, ITALIAN VERSION



NB: per il grafico è stato utilizzato ISCED 1997. Per un grafico che utilizza ISCED 2011 si rimanda a: *Relazione sull'istruzione e la formazione professionale (IFP) in Italia* (Cedefop, 2014).
Fonte: Cedefop e ReferNet Italia.

Source: (CEDEFOP, 2014 IT), Italian version.

POST-SECONDARY LEVEL

***Istruzione e formazione tecnica superior*, Higher Education and Training programmes**

Higher technical education and training for youngsters and adults

***Istituti tecnici superiori*, Higher Technical Institutes**

These institutions provide technical training in areas considered key objectives for the country´s future

Post-IeFP

Other courses combine technical studies with on-the-job learning and focus on training the unemployed, migrants and disabled people.

HIGHER EDUCATION LEVEL

***Apprendistato di alta formazione e ricerca*, Higher education and research apprenticeships**

School-based programmes offered to students between 18 to 29 years of age at secondary, post-secondary and tertiary levels. They include a doctoral degree.

***Apprendistato professionalizzante o contratto di mestiere*, Professional apprenticeships**

Programmes that last up to 3 years, five in the case of the craft sector, that offer employees between 18 to 29 years of age the opportunity to qualify and/or requalify. Workers employed in a restructured sector can use this training to prepare for a new job.

6.3.3 National Qualifications Framework

Since 2003, Italy has been pushing forward reforms in its education and training system (upper secondary general education and VET (COUNCIL OF MINISTERS, 2010) and higher education). Although some technical work has been done towards a national qualifications framework (NCP, 2012), more agreements that are political are needed to move forward (MINISTRY OF LABOUR, REGIONS AND SOCIAL PARTNERS, 2010). The responsibility for this initiative is shared between the Ministry of Labour and Social Policies and the Ministry of Education, University and Research; the process is supported by the regions and social partners (CEDEFOP, 2012 NQF, pp. 129-133).

Even though the future of the NQF is still pending a political commitment, Italy has linked its qualifications levels directly to the EQF. The EQF recommendations permits this possibility, thus Italy has linked (using learning outcomes descriptions and definitions) the majority of its studies to the different EQF levels (PLOTEUS, 2012). In addition, the Italian qualifications framework for higher education is already in place.

Non-formal and informal learning recognition is being handled by initiatives at a national level by the Ministry of Education, University and Research, the Ministry of Labour and Social Policies, the Regions and social stakeholders. The *Libretto formativo del cittadino* (Citizen Learning Booklet) was announced by Decree No. 276 of 2003 and created by decree in October 2005. This Booklet represents a nationwide initiative to improve the employability of the Italians. It brings together the workers´ learning experience and includes the competencies acquired at learning institutions, at other training courses and at work. The Booklet has been used since 2006 in different regions to improve the employability of groups like the unemployed, apprentices, volunteers, migrants and officers discharged from the Armed Forces (PLOTEUS, 2012, p. 33).

FIGURE 26 REFERENCING FRAMEWORK OF ITALIAN NATIONAL QUALIFICATIONS

EQF Level	Type of qualification	Competent authority	Relevant education/training pathway
1	*Diploma di licenza conclusiva del primo ciclo di istruzione* Lower secondary school leaving diploma	MIUR	Lower secondary school
2	*Certificato delle competenze di base acquisite in esito all'assolvimento dell'obbligo di istruzione* Compulsory education certificate	MIUR or Regions, according to the type of education pathway	End of the first two-years: *Licei*, Technical schools, Vocational schools, three-year and four-year VET pathways
3	*Attestato di qualifica di operatore professionale* Professional operator certificate	Regions	Three-year VET pathways[32].
4	*Diploma professionale di tecnico* Professional technician diploma	Regions	Four-year VET pathways[33]
	Diploma liceale Upper secondary education diploma - *Licei*	MIUR	Five-year Upper secondary schools (*licei*) (Higher education and research apprenticeship programme)
	Diploma di istruzione tecnica Upper secondary education diploma - Technical schools	MIUR	Five-year technical schools (Higher education and research apprenticeship programme)
	Diploma di istruzione professionale Upper secondary education diploma - Vocational schools	MIUR	Five-year vocational schools (Higher education and research apprenticeship programme)
	Certificato di specializzazione tecnica superiore Higher technical specialization certificate	Regions	Higher Technical Education and Training pathways (IFTS) (Higher education and research apprenticeship programme)
5	*Diploma di tecnico superiore* Higher technical education diploma	MIUR	Higher Technical Education pathways (ITS) (Higher education and research apprenticeship programme)
6	*Laurea* Bachelor's degree	MIUR	Three-year bachelor's degree courses (180 credits -ECTS) (Higher education and research apprenticeship programme)
	Diploma accademico di primo livello First - level academic diploma	MIUR	Three-year courses (180 credits - ECTS)

[32] The qualification can also be achieved in vocational schools, as per agreement with Regions or in apprenticeship programmes (for young people over 15 y.o.).
[33] See previous footnote.

EQF Level	Type of qualification	Competent authority	Relevant education/training pathway
7	*Laurea Magistrale* Master's degree	MIUR	Two-year master's degree courses (120 credits – ECTS) (Higher education and research apprenticeship programme)
	Diploma accademico di secondo livello Second - level academic diploma	MIUR	Two-year courses (120 credits - ECTS)
	Master universitario di primo livello First - level university master	MIUR	Minimum one year courses (min. 60 credits - ECTS) (Higher education and research apprenticeship programme)
	Diploma accademico di specializzazione Academic specialization Diploma (I)	MIUR	Minimum two years courses (120 credits - ECTS)
	Diploma di perfezionamento o Master (I) Higher specialization diploma or Master (I)	MIUR	Minimum one year courses (min. 60 credits - ECTS)
8	*Dottorato di ricerca* Research Ddoctorate (PhD)	MIUR	Three-year courses (Higher education and research apprenticeship programme)
	Diploma accademico di formazione alla ricerca Academic Diploma for research training	MIUR	Three-year courses
	Diploma di specializzazione Specialization diploma	MIUR	Minimum two years courses (120 credits - ECTS) (Higher education and research apprenticeship programme)
	Master universitario di secondo livello Second - level university master	MIUR	Minimum one year courses (min. 60 credits - ECTS) (Higher education and research apprenticeship programme)
	Diploma accademico di specializzazione(II) Academic specialization diploma (II)	MIUR	Minimum two years courses (120 credits - ECTS)
	Diploma di perfezionamento o Master (II) Higher specialization diploma or Master (II)	MIUR	Minimum one year courses (min. 60 credits - ECTS)

Source: (PLOTEUS, 2012, pp. 60,61).

The Ministry of Labour, Regions and social partners signed 17 February 2010 the document *Linee Guida per la Formazione* (Training Guidelines) with the purpose of relaunching the National Qualifications System as a tool to acknowledge non-formal and informal learning outcomes (PLOTEUS, 2012, p. 34).

The *Istituto per lo Sviluppo della Formazione Professionale dei Lavoratori ISFOL* (national institute for development of vocational training) is the NCP in charge of national coordination. This institution is in charge of the EQF implementation process and the implementation of the national qualifications database.

At this moment, the Italian NQF levels and their descriptors have not been defined as a whole. Italy has decided to directly reference all the national qualifications directly to the eight EQF levels (see Figure 26) instead of waiting to have their NQF ready. Nevertheless, some parts like the qualifications framework at upper secondary level and those for higher education (Quadro dei Titoli Italiani, using the Dublin descriptors) (IQF, 2012) are already in place.

The EQF level descriptors and the learning outcomes are the guidelines for the next steps of the Italian NQF development and are being used in the different systems that can be found at national and regional levels.

The regulation of upper secondary education was reformed in 2010 and as a result the VET curricula is being redesigned to match the EQF levels and descriptors. Students will be able to achieve three-year vocational qualifications and a four-year vocational diploma.

IFTS studies (higher, non-academic professional education and training) used since 2000 a national standard system based on competences. The National Committee on IFTS agreed in 2008 to adapt the system to use learning outcomes. This agreement includes the regional IFTS courses, that last for a year and the national IFTS courses that last two years.

6.3.4 ECTS and ECVET credit system

The ECTS credit system is already being used in the Italian Higher Education studies, using it at universities with the equivalence 1 CFU = 1 ECTS. Overall recognition of ECTS credits in the VET studies at EQF level 5, for example at the *Istituti tecnici superiori*, High Technical Institutes / EQF 5, is not widespread and done mainly on a one-to-one basis.

Development of ECVET in Italy is still underway. During the past decade, Italy is undergoing a broad reform of its VET system. 21 different regional authorities have, historically, certified different qualifications and the new national framework is starting to facilitate the recognition of the regional VET studies across the nation. ECVET is seen as an opportunity as it fosters a more efficient and homogeneous national qualifications system based on learning outcomes (CEDEFOP, 2013 ECVET B).

Law 53/2003 focuses on learning outcomes in terms of knowledge, abilities and skills. Its Annex D describes the set of standard learning outcomes for the basic skills, as well as the list of learning outcomes for each professional profile. These are used to define the *plano dell'offerta formative* (training offer programmes). The Ministry of Education together with the main stakeholders in education at national and regional level has developed guidelines to foster the development of study programmes focused on learning outcomes and divided into basic, transversal and technical modules (CEDEFOP, 2012 RN IT).

IFTS study programmes are divided in modules linked to a certain amount of learning units. These units are valid to receive credits in the university system and are ECTS-compatible (CEDEFOP, 2012 RN IT).

In Italy, in second cycle education and higher education studies, students usually have to pass a final examination at the end of each study programme as a prerequisite to receive the nationally recognised certificate (CEDEFOP, 2014 A).

The National Legislative Decree, 16 January 2013, No 13 regulated the recognition of non-formal and informal learning. This decree provides information about the responsibilities of the public certification system, the certification process, the contents of a certificate, the quality assurance of the process and the link to the *repertorio nazionale delle qualifiche* (national qualifications index). This decree also intends to develop a national credit system consistent with ECVET and based on learning outcomes (CEDEFOP, 2013 ECVET B).

The transfer of learning outcomes acquired abroad can be done on a one-to-one basis. In 2012, the Italian and German Ministries of Labour and Social Policy and the Ministries of Education, University and Research signed a Memorandum of Understanding MoU to foster mobility projects between both countries (CEDEFOP, 2013 ECVET B).

A Community of Practice has been created to help the cooperation between organisations that have implemented ECVET and institutions that want to implement it in the future (CEDEFOP, 2013 ECVET B).

6.3.5 EQAVET quality assurance

The EQAVET Secretariat provides information about the Italian EQAVET implementation (EQAVET Secretariat, 2015 IT A). Until 2006 quality assurance was mainly viewed as a control action rather than a measure that could foster improvement. Thus, the teachers did not have a great interest in quality assurance. Nowadays, a lot of quality procedures are being implemented and the interest for quality of teachers and education institutions is increasing.

> *As far as quality assurance in VET is concerned, ISFOL - The Institute for the Development of Vocational Training of Workers - supports the work of the Ministry of Labour, Ministry of Education and Regional Governments in the field of vocational education and training. It covers all parts of VET. Statistical data is provided by the Italian national statistics office, ISTAT.*
>
> *An Italian Reference point for Quality Assurance in VET has been set up, under coordination of ISFOL. The main goals are to inform main national stakeholders about the activities of the EQAVET, to provide active support for the development of this programme, to apply methods to ensure and develop quality in VET, to raise awareness among stakeholders of the benefits of QA tools and indicators and to coordinate organized national activities.*
>
> *As far as this national reference point is concerned, its main tasks are to:*
>
> - *Inform key stakeholders on the national activities for the European Network;*
> - *Actively support the development of the programme for the European Network;*
> - *Promote initiatives to improve the use of methodologies and tools for the development of quality assurance;*
> - *Raise awareness of the benefits from the methodologies developed for quality assurance;*
> - *Coordinate the organization of national activities carried out vis-à-vis to participation in the European Network for Quality.*
>
> (EQAVET Secretariat, 2015 IT A)

The Italian Reference Point includes representatives from the Ministry of Education and Labour, their regional sub-divisions, training bodies, schools, trade unions and enterprises. The

National Credit System for VET that is being designed will include procedures for Quality Assurance.

General and vocational schools have to send a self-evaluation to a website. They can then access their indicators (context, input, process and outputs) compared with provincial averages.

> *At national level in March 2012 a "National plan for quality assurance" was approved by Ministries of Labour and Education and its implementation is in progress; it is meant to be gradually implemented starting from the existing quality assurance models and tools for QA both at national and local level. The national plan will adopt some indicators, with reference to those suggested by the European Recommendation, without missing qualitative evaluation able to take into account the complexity of training activities and the great number of stakeholders involved. The use of indicators and other statistical parameters can be considered as a support to a more comprehensive assessment. The plan is targeted to the whole national education and training system.*
>
> (EQAVET Secretariat, 2015 IT A)

6.3.6 Erasmus VET Mobility

The Italian Erasmus+ National Agency, *Agenzia nazionale Erasmus+ ISFOL*, awarded during the period 2014/2016 Erasmus+ KA102 / 116 VET funds to 270 projects proposed by 219 different institutions. 3% of these institutions received funds at the calls of the three years. The average amount of projects per institution was 1.23 (see Table 30).

In 2014 the amount of 25,380,671 € in KA 102 grants was distributed to 99 projects, in 2015 the total of 25,329,200 € went to 82 projects and in 2016 the amount of 26,241,100 € was assigned to 89 projects (see Table 28).

50.14% Students with a Fair Access to Funds – SFAF, (see Equation 2) of all the Italian students had the possibility to benefit, during 2014, from a standard amount of KA 102 grants, RME between 50% and 200% (see Equation 1), 46.94% in 2015, 47.16% in 2016, making an average in the period of SFAF=48.08% (see Table 29).

The National Equity - NE (see Equation 3) determines if the funds have been mathematically equally distributed, meaning NE=100% that all the students had equal chances to receive funds and NE=0% that no students had access to funds. In the case of Italy, the National Equity was 68.81% in 2014, 66.50% in 2015 and 62.26% in 2016. The average value for the period was NE=65.86% (see Table 29).

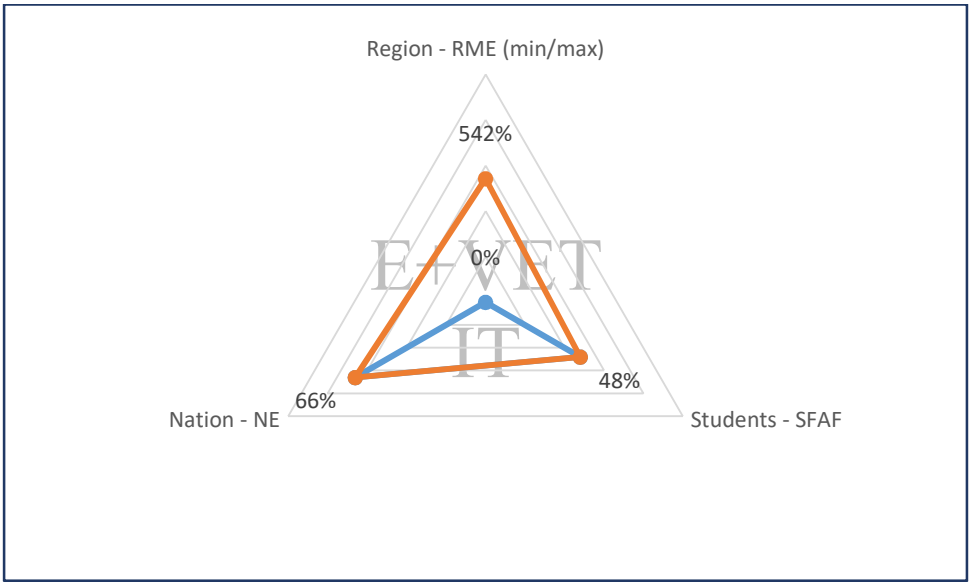
On average, during the whole period the amount received per project was 286,702 € and each of the most frequent-sized projects received 1,2% of the total national budget. There were on average 8% of these frequent-sized projects that received 16% of the national budget (see Table 28).

The first 20% of the national budget was awarded to the 8.33 (on average) biggest projects. These projects represent 9 % of all the projects (see Table 28).

The first 50% of the national budget was awarded to the 25.67 (on average) biggest projects. These projects represent 29% of all the projects (see Table 28).

During the period 2014-2016 the region of Molise had the maximum Regional Mobility Efficiency, RME=368% and Liguria and Valle d'Aosta / Vallée d'Aoste the minimum, RME=0% (see Table 34).

FIGURE 27 ITALY- REGIONAL, STUDENTS´ AND NATIONAL 2014/2016 AVERAGE VALUES



Source: Compiled by the author with data from Table 29 and Table 34 (RME values presented 10 times smaller).

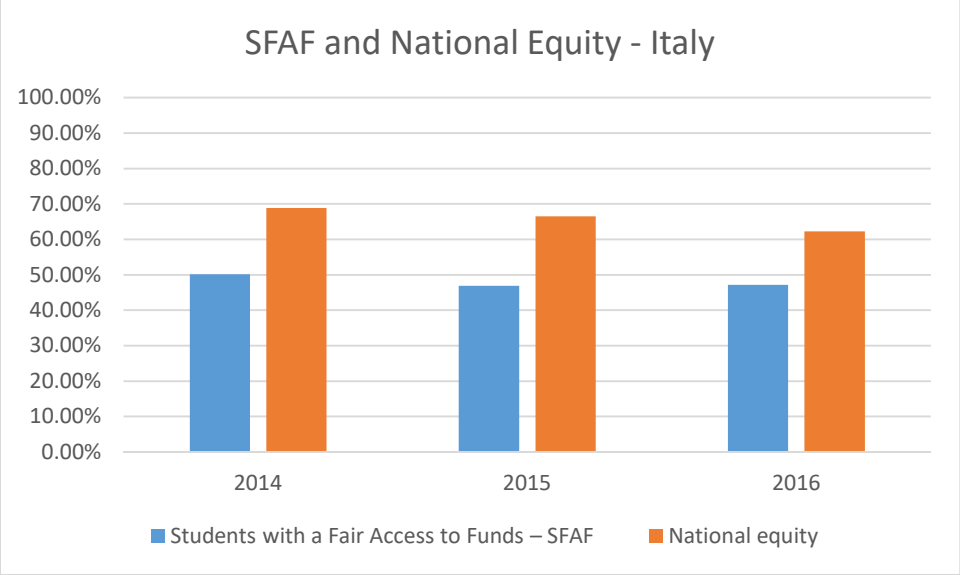
The funding data of years 2014, 2015 and 2016 was provided by the Italian Erasmus+ National Agency, *Agenzia nazionale Erasmus+ ISFOL* (ISFOL, 2016). The information about the amount of students in each region was provided by (ISTAT, 2013). This data was used to perform the estimations and create the graphs available in this section and section 7.4.

TABLE 28 ITALY - MONITORING ERASMUS+ VET 2014/2016

	2014	2015	2016	Average
National budget	25,380,671 €	25,329,200 €	26,241,100 €	25,650,324 €
Number of projects	99	82	89	90
Biggest Project	867,890 €	857,559 €	1,008,478 €	911,309 €
Smallest Project	14,585 €	24,735 €	24,735 €	21,352 €
Average Project	256,370 €	308,893 €	294,844 €	286,702 €
Projects / Region	4.95	4.10	4.45	4.50
€/ Region	1,269,034 €	1,266,460 €	1,312,055 €	1,282,516 €
Amount of projects that represent 20% of the budget	9	8	8	8.33
… percentage of nations total	9%	10%	9%	9%
Amount of projects that represent 50% of the budget	29	24	24	25.67
… percentage of nations total	29%	29%	27%	29%
Most frequent size, in % of national budget	1.0%	1.4%	1.1%	1.2%
amount of frequent size projects	7	7	8	7.33
amount of frequent size projects, % over total	7%	9%	9%	8%
… and represent % of the total budget	33%	8%	8%	16%
Students in regions with more than the national average budget	41.54%	30.04%	41.05%	37.54%
Students in regions with less than the national average budget	58.46%	69.96%	58.95%	62.46%
Students in regions with more than double the national average budget	11.23%	10.73%	11.89%	11.29%
Students in regions with less than half the national average budget	38.63%	42.33%	40.95%	40.64%
Students in regions with no access to funds	4.81%	5.09%	2.32%	4.07%
Students with a Fair Access to Funds – SFAF	**50.14%**	**46.94%**	**47.16%**	**48.08%**
National equity	**68.81%**	**66.50%**	**62.26%**	**65.86%**
Regions	20	20	20	20
Regions with biggest project greater than 30%	9	10	13	10.67
… percentage of nations total	45%	50%	65%	53%
Regions with biggest project greater than 50%	4	8	9	7
… percentage of nations total	20%	40%	45%	35%
Institutions that have always received funds (2014/16)				**3%**
Average projects per institution (2014/16)				**1.23**

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 28 ITALY - SFAF AND NATIONAL EQUITY 2014/2016



Source: Compiled by the author with the data referenced at the beginning of this section.

TABLE 29 ITALY - SFAF AND NATIONAL EQUITY 2014/2016

	2014	2015	2016	Average
Students with a Fair Access to Funds – SFAF	50.14%	46.94%	47.16%	48.08%
National equity	68.81%	66.50%	62.26%	65.86%

Source: Compiled by the author with the data referenced at the beginning of this section.

TABLE 30 ITALY - TIMES AN INSTITUTION HAS BEEN FUNDED 2014/2016

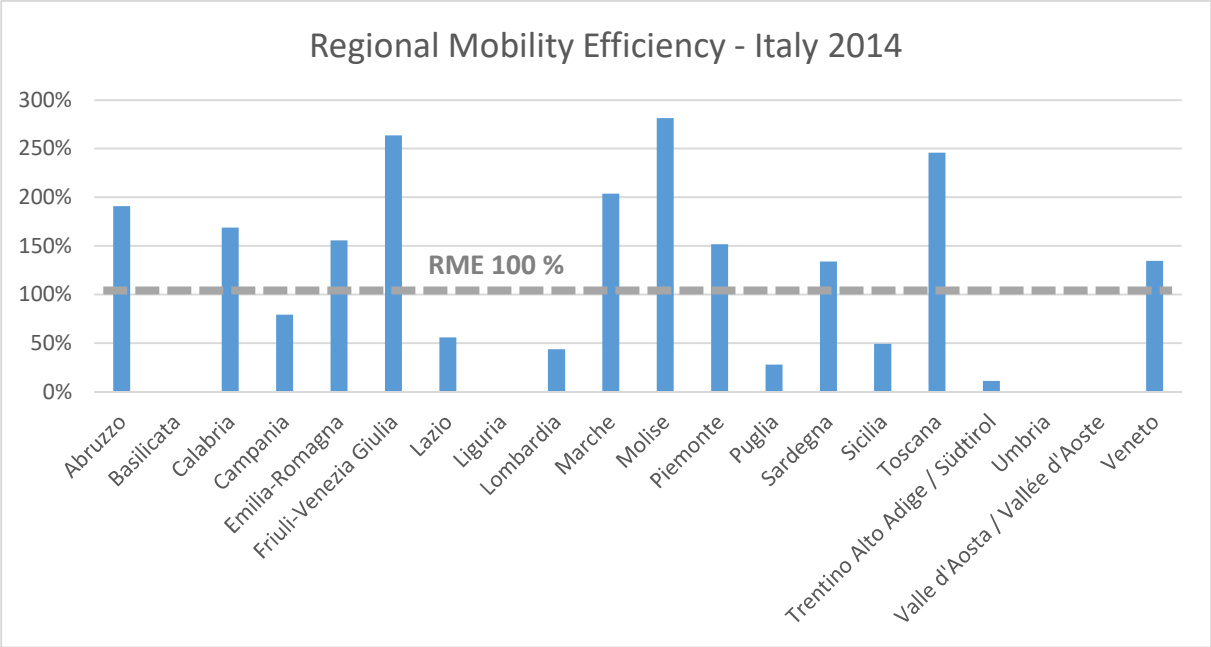
Region	Times an institution has been funded 2014/2016						
	Once	Twice	Always	Always (% of regional institutions)	Institutions in the region	Institutions from national total	Regional regularity
Abruzzo	5	1	0	0%	6	3%	0.00
Basilicata	5	0	0	0%	5	2%	0.00
Calabria	8	1	0	0%	9	4%	0.00
Campania	22	1	0	0%	23	11%	0.00
Emilia-Romagna	11	7	0	0%	18	8%	0.00
Friuli-Venezia Giulia	5	1	1	14%	7	3%	4.47
Lazio	14	2	0	0%	16	7%	0.00
Liguria	0	0	0	0%	0	0%	0.00
Lombardia	12	1	0	0%	13	6%	0.00
Marche	9	5	1	7%	15	7%	0.97
Molise	5	0	0	0%	5	2%	0.00
Piemonte	11	2	2	13%	15	7%	1.95
Puglia	6	0	0	0%	6	3%	0.00
Sardegna	5	0	0	0%	5	2%	0.00
Sicilia	5	3	0	0%	8	4%	0.00
Toscana	28	8	1	3%	37	17%	0.16
Trentino Alto Adige / Südtirol	3	0	0	0%	3	1%	0.00
Umbria	6	1	0	0%	7	3%	0.00
Valle d'Aosta / Vallée d'Aoste	0	0	0	0%	0	0%	0.00
Veneto	14	6	1	5%	21	10%	0.50
Total institutions	174	39	6	3%	219	100%	0.03
Total projects	174	78	18		270		

Source: Compiled by the author with the data referenced at the beginning of this section. The regional regularity is the percentage of regional institutions that have always received funds divided by the percentage of regional institutions from the national total.

During the period 2014/2016, 6 out of 219 institutions were funded each of the three years and 39 institutions were funded twice.

Friuli-Venezia Giulia, Marche, Piemonte, Toscana and Veneto are the 5 out of 21 regions that have institutions funded during the three years.

FIGURE 29 ITALY - ERASMUS+ VET RME 2014



NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Region	RME 2014
Abruzzo	191%
Basilicata	**0%**
Calabria	169%
Campania	79%
Emilia-Romagna	156%
Friuli-Venezia Giulia	264%
Lazio	56%
Liguria	**0%**
Lombardia	44%
Marche	204%
Molise	281%
Piemonte	152%
Puglia	28%
Sardegna	134%
Sicilia	49%
Toscana	246%
Trentino Alto Adige / Südtirol	11%
Umbria	**0%**
Valle d'Aosta / Vallée d'Aoste	**0%**
Veneto	135%

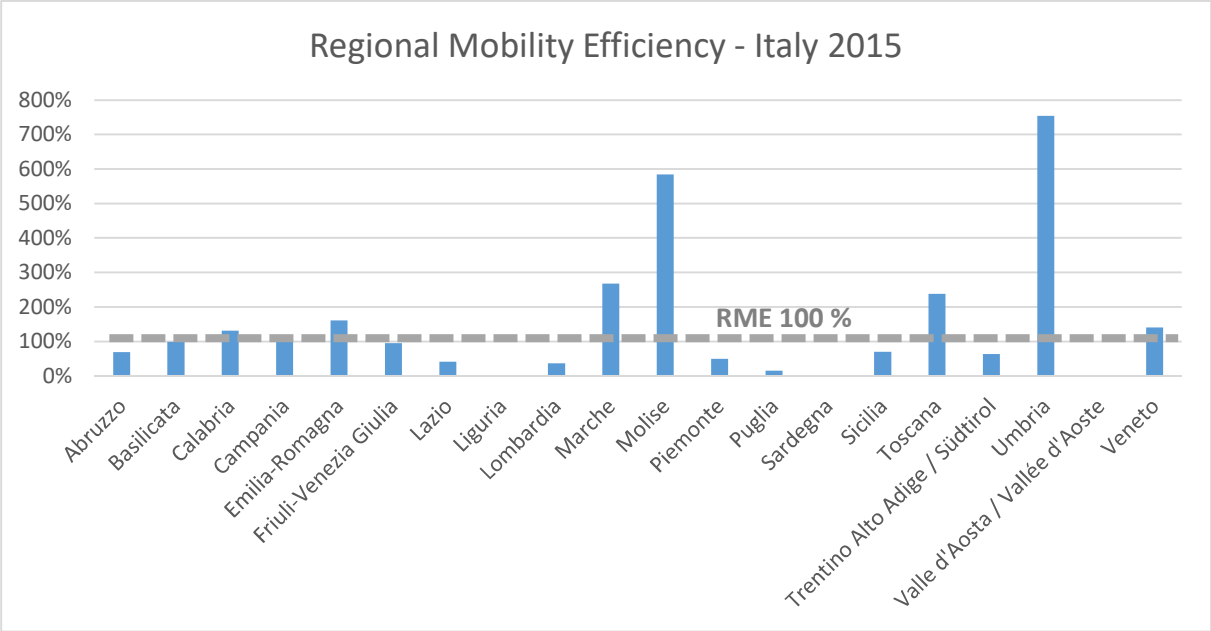
Source: Compiled by the author with the data referenced at the beginning of this section.

TABLE 31 ITALY - ERASMUS+ VET REGIONAL DATA 2014

ITALY 2014		Budget	% €	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects / 100 K Students	€/ Project	€/ Student	Regional Mobility Efficiency	Inequity	Inequity	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
Sud	Abruzzo	993,251 €	3.9%	30381	2.0%	4	4.0%	470,767 €	47%	1.85%	13.17	248,313 €	32.69	191%	2%	2%					
Sud	Basilicata	- €	0.0%	17174	1.2%	0	0.0%	- €	0%	0.00%	0.00	n.a.	0.00	0%	-1%	1%	2.05%				
Sud	Calabria	1,647,909 €	6.5%	57065	3.8%	5	5.1%	556,414 €	34%	2.19%	8.76	329,582 €	28.88	169%	3%	3%		1.16%			1.16%
Sud	Campania	2,385,575 €	9.4%	175927	11.9%	7	7.1%	682,735 €	29%	2.69%	3.98	340,796 €	13.56	79%	-2%	2%	3.85%				
Nord-est	Emilia-Romagna	2,888,774 €	11.4%	108394	7.3%	10	10.1%	406,111 €	14%	1.60%	9.23	288,877 €	26.65	156%	4%	4%		11.87%			
Nord-est	Friuli-Venezia Giulia	1,228,296 €	4.8%	27209	1.8%	4	4.0%	750,526 €	61%	2.96%	14.70	307,074 €	45.14	264%	3%	3%	1.84%		1.84%		
Centro	Lazio	1,127,051 €	4.4%	118089	8.0%	9	9.1%	297,287 €	26%	1.17%	7.62	125,228 €	9.54	56%	-4%	4%		7.97%			
Nord-ovest	Liguria	- €	0.0%	31641	2.1%	0	0.0%	- €	0%	0.00%	0.00	n.a.	0.00	0%	-2%	2%		2.13%		2.13%	2.13%
Nord-ovest	Lombardia	1,630,784 €	6.4%	217712	14.7%	5	5.1%	867,890 €	53%	3.42%	2.30	326,157 €	7.49	44%	-8%	8%		14.69%		14.69%	
Centro	Marche	1,530,607 €	6.0%	43892	3.0%	7	7.1%	293,780 €	19%	1.16%	15.95	218,658 €	34.87	204%	3%	3%	2.96%		2.96%		
Sud	Molise	395,901 €	1.6%	8217	0.6%	1	1.0%	395,901 €	100%	1.56%	12.17	395,901 €	48.18	281%	1%	1%	0.55%		0.55%		
Nord-ovest	Piemonte	2,378,354 €	9.4%	91626	6.2%	11	11.1%	487,664 €	21%	1.92%	12.01	216,214 €	25.96	152%	3%	3%	6.18%				
Sud	Puglia	593,410 €	2.3%	124648	8.4%	3	3.0%	239,574 €	40%	0.94%	2.41	197,803 €	4.76	28%	-6%	6%		8.41%		8.41%	
Isole	Sardegna	940,063 €	3.7%	40992	2.8%	4	4.0%	288,360 €	31%	1.14%	9.76	235,016 €	22.93	134%	1%	1%	2.77%				
Isole	Sicilia	1,140,586 €	4.5%	135053	9.1%	4	4.0%	554,240 €	49%	2.18%	2.96	285,147 €	8.45	49%	-5%	5%		9.11%		9.11%	
Centro	Toscana	3,671,315 €	14.5%	87233	5.9%	16	16.2%	381,255 €	10%	1.50%	18.34	229,457 €	42.09	246%	9%	9%	5.88%		5.88%		
Nord-est	Trentino Alto Adige / Südtirol	44,822 €	0.2%	23892	1.6%	1	1.0%	44,822 €	100%	0.18%	4.19	44,822 €	1.88	11%	-1%	1%		1.61%		1.61%	
Centro	Umbria	- €	0.0%	19777	1.3%	0	0.0%	- €	0%	0.00%	0.00	n.a.	0.00	0%	-1%	1%		1.33%		1.33%	1.33%
Nord-ovest	Valle d'Aosta / Vallée d'Aoste	- €	0.0%	2753	0.2%	0	0.0%	- €	0%	0.00%	0.00	n.a.	0.00	0%	0%	0%		0.19%		0.19%	0.19%
Nord-est	Veneto	2,783,973 €	11.0%	120758	8.1%	8	8.1%	565,437 €	20%	2.23%	6.62	347,997 €	23.05	135%	3%	3%	8.15%	41.54%	58.46%	11.23%	38.63%	4.81%

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 30 ITALY - ERASMUS+ VET RME 2015

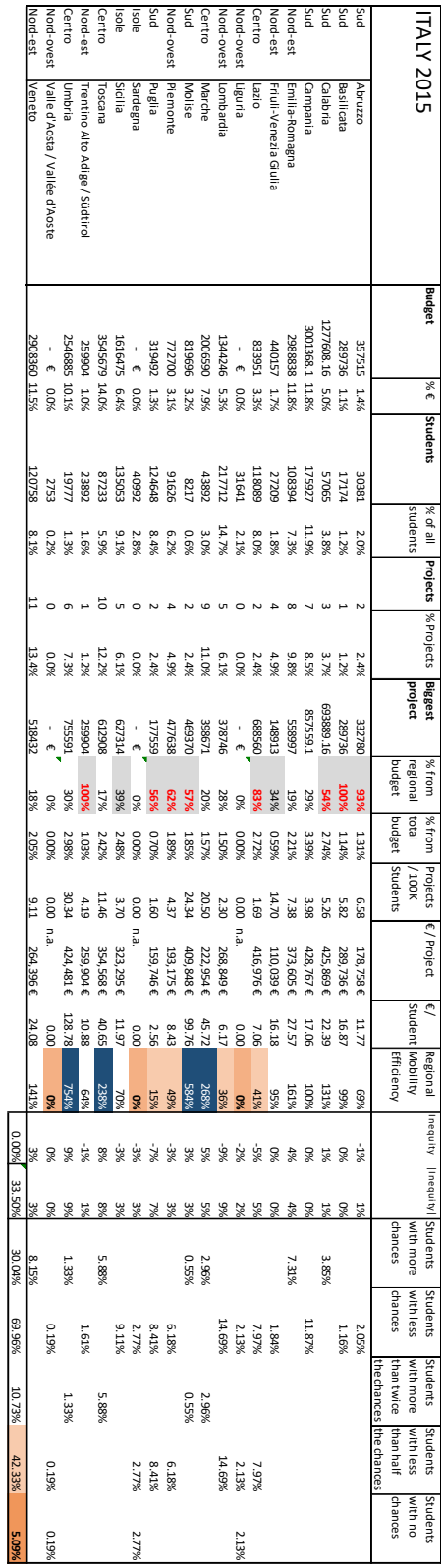


NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Region	RME 2015
Abruzzo	69%
Basilicata	99%
Calabria	131%
Campania	100%
Emilia-Romagna	161%
Friuli-Venezia Giulia	95%
Lazio	41%
Liguria	**0%**
Lombardia	36%
Marche	268%
Molise	584%
Piemonte	49%
Puglia	15%
Sardegna	**0%**
Sicilia	70%
Toscana	238%
Trentino Alto Adige / Südtirol	64%
Umbria	754%
Valle d'Aosta / Vallée d'Aoste	**0%**
Veneto	141%

Source: Compiled by the author with the data referenced at the beginning of this section.

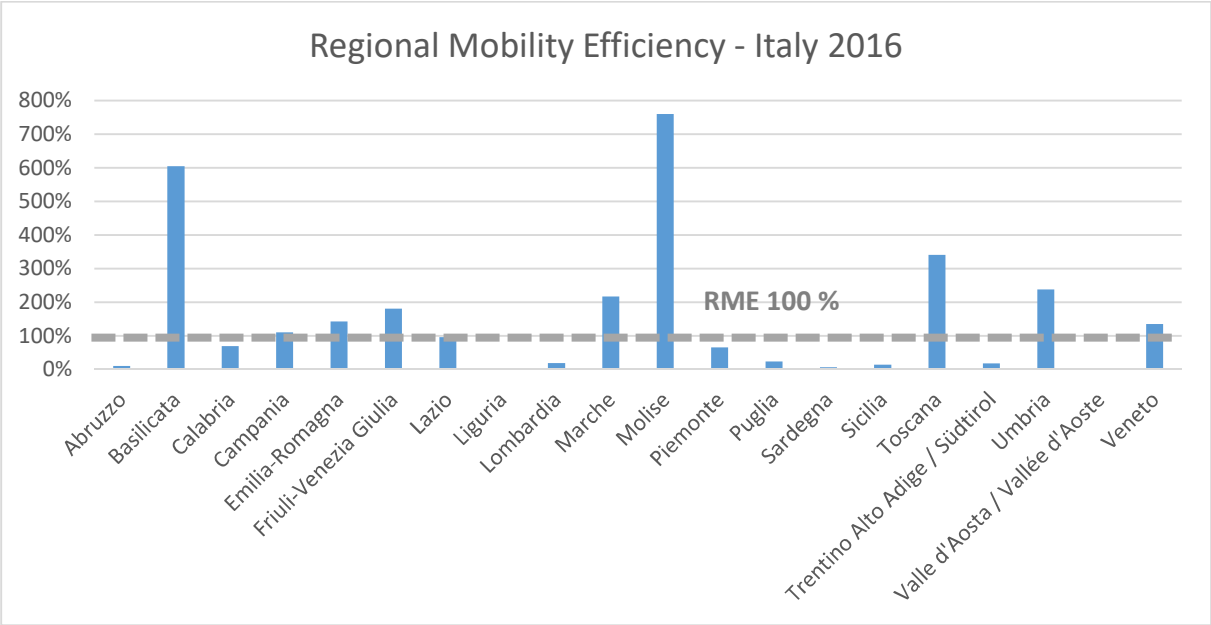
TABLE 32 ITALY - ERASMUS+ VET REGIONAL DATA 2015



ITALY 2015		Budget		Students		Projects		Biggest project	% from regional budget	% from total budget	Projects /100K Students	€/ Project	€/ Student	Regional Mobility Efficiency	Inequity	|Inequity|	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
Sud	Abruzzo	357515	1.4%	30381	2.0%	2	2.4%	332780	93%	1.31%	6.58	178,758 €	11.77	69%	-1%	1%					
Sud	Basilicata	289736	1.1%	17174	1.2%	1	1.2%	289736	100%	1.14%	5.82	289,736 €	16.87	99%	0%	0%					
Sud	Calabria	1277608.16	5.0%	57065	3.8%	3	3.7%	693889.16	54%	2.74%	5.26	425,869 €	22.39	131%	1%	1%		3.85%			
Sud	Campania	3001368.1	11.8%	175927	11.9%	7	8.5%	857559.1	29%	3.39%	3.98	428,767 €	17.06	100%	0%	0%		7.31%	11.87%		
Nord-est	Emilia-Romagna	2988838	11.8%	108394	7.3%	8	9.8%	558997	19%	2.21%	7.38	373,605 €	27.57	161%	4%	4%					
Nord-est	Friuli-Venezia Giulia	440157	1.7%	27209	1.8%	4	4.9%	148913	34%	0.59%	14.70	110,039 €	16.18	95%	0%	0%			1.84%		
Centro	Lazio	833951	3.3%	118089	8.0%	2	2.4%	688560	83%	2.72%	1.69	416,976 €	7.06	41%	-5%	5%			7.97%	7.97%	
Nord-ovest	Liguria	-	€ 0.0%	31641	2.1%	0	0.0%	-	€ 0%	0.00%	0.00	n.a.	0.00	0%	-2%	2%			2.13%	2.13%	2.13%
Nord-ovest	Lombardia	1344246	5.3%	217712	14.7%	5	6.1%	378746	28%	1.50%	2.30	268,849 €	6.17	36%	-9%	9%			14.69%	14.69%	
Centro	Marche	2006590	7.9%	43892	3.0%	9	11.0%	398671	20%	1.57%	20.50	222,954 €	45.72	268%	5%	5%		2.96%		2.96%	
Sud	Molise	819696	3.2%	8217	0.6%	2	2.4%	469370	57%	1.85%	24.34	409,848 €	99.76	584%	3%	3%		0.55%		0.55%	
Nord-ovest	Piemonte	772700	3.1%	91626	6.2%	4	4.9%	477638	62%	1.89%	4.37	193,175 €	8.43	49%	-3%	3%			6.18%	6.18%	
Sud	Puglia	319492	1.3%	124648	8.4%	2	2.4%	177559	56%	0.70%	1.60	159,746 €	2.56	15%	-7%	7%			8.41%	8.41%	
Isole	Sardegna	-	€ 0.0%	40992	2.8%	0	0.0%	-	€ 0%	0.00%	0.00	n.a.	0.00	0%	-3%	3%			2.77%	2.77%	2.77%
Isole	Sicilia	1616475	6.4%	135053	9.1%	5	6.1%	627314	39%	2.48%	3.70	323,295 €	11.97	70%	-3%	3%			9.11%		
Centro	Toscana	3545679	14.0%	87233	5.9%	10	12.2%	612908	17%	2.42%	11.46	354,568 €	40.65	238%	8%	8%		5.88%		5.88%	
Nord-est	Trentino Alto Adige / Südtirol	259904	1.0%	23892	1.6%	1	1.2%	259904	100%	1.03%	4.19	259,904 €	10.88	64%	-1%	1%			1.61%		
Centro	Umbria	2546885	10.1%	19777	1.3%	6	7.3%	755591	30%	2.98%	30.34	424,481 €	128.78	754%	9%	9%		1.33%		1.33%	
Nord-ovest	Valle d'Aosta / Vallée d'Aoste	-	€ 0.0%	2753	0.2%	0	0.0%	-	€ 0%	0.00%	0.00	n.a.	0.00	0%	0%	0%			0.19%		0.19%
Nord-est	Veneto	2908360	11.5%	120758	8.1%	11	13.4%	518432	18%	2.05%	9.11	264,396 €	24.08	141%	3%	3%	0.00%	8.15%	69.96%	10.73%	42.33%	5.09%
															3%	3%	33.50%	30.04%			

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 31 ITALY - ERASMUS+ VET RME 2016



NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Region	RME 2016
Abruzzo	11%
Basilicata	605%
Calabria	69%
Campania	111%
Emilia-Romagna	143%
Friuli-Venezia Giulia	181%
Lazio	96%
Liguria	**0%**
Lombardia	19%
Marche	217%
Molise	760%
Piemonte	66%
Puglia	24%
Sardegna	7%
Sicilia	14%
Toscana	341%
Trentino Alto Adige / Südtirol	18%
Umbria	238%
Valle d'Aosta / Vallée d'Aoste	**0%**
Veneto	135%

Source: Compiled by the author with the data referenced at the beginning of this section.

TABLE 33 ITALY - ERASMUS+ VET REGIONAL DATA 2016

ITALY 2016		Budget	% €	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects / 100 K Students	€ / Project	€ / Student	Regional Mobility Efficiency	Inequity	I Inequity	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
Sud	Abruzzo	58208	0.2%	30381	2.0%	1	1.1%	58208	100%	0.22%	3.29	58,208 €	1.92	11%	-2%	2%		2.05%		2.05%	
Sud	Basilicata	1838427.2	7.0%	17174	1.2%	4	4.5%	679353	37%	2.59%	23.29	n.a.	107.05	605%	6%	6%	1.16%		1.16%		
Sud	Calabria	700465	2.7%	57065	3.8%	2	2.2%	453712	65%	1.73%	3.50	350,233 €	12.27	69%	-1%	1%		3.85%			
Sud	Campania	3444722.53	13.1%	175927	11.9%	10	11.2%	1008477.53	29%	3.84%	5.68	344,472 €	19.58	111%	1%	1%	11.87%				
Nord-est	Emilia-Romagna	2742690.78	10.5%	108394	7.3%	7	7.9%	698886.78	25%	2.66%	6.46	391,813 €	25.30	143%	3%	3%	7.31%				
Nord-est	Friuli-Venezia Giulia	870152	3.3%	27209	1.8%	2	2.2%	636359	73%	2.43%	7.35	435,076 €	31.98	181%	1%	1%	1.84%				
Centro	Lazio	2010884	7.7%	118089	8.0%	7	7.9%	636230	32%	2.42%	5.93	287,269 €	17.03	96%	0%	0%		7.97%			
Nord-ovest	Liguria	-	€ 0.0%	31641	2.1%	0	0.0%	-	€ 0%	0.00%	0.00	n.a.	0.00	0%	-2%	2%		2.13%		2.13%	
Nord-ovest	Lombardia	724790	2.8%	217712	14.7%	4	4.5%	362354	50%	1.38%	1.84	181,198 €	3.33	19%	-12%	12%		14.69%		14.69%	
Centro	Marche	1687726	6.4%	43892	3.0%	6	6.7%	562713	33%	2.14%	13.67	281,288 €	38.45	217%	3%	3%	2.96%		2.96%		
Sud	Molise	1105612.41	4.2%	8217	0.6%	2	2.2%	685448.41	62%	2.61%	24.34	552,806 €	134.55	760%	4%	4%	0.55%		0.55%		
Nord-ovest	Piemonte	1070944	4.1%	91626	6.2%	6	6.7%	296198	28%	1.13%	6.55	178,491 €	11.69	66%	-2%	2%		6.18%			
Sud	Puglia	526340	2.0%	124648	8.4%	1	1.1%	528340	100%	2.01%	0.80	526,340 €	4.22	24%	-8%	6%		8.41%		8.41%	
Isole	Sardegna	50963	0.2%	40992	2.8%	1	1.1%	50963	100%	0.19%	2.44	n.a.	1.24	7%	-3%	3%		2.77%		2.77%	
Isole	Sicilia	345998	1.3%	135053	9.1%	2	2.2%	295248	85%	1.13%	1.48	172,999 €	2.56	14%	-8%	8%		9.11%		9.11%	
Centro	Toscana	5259205	20.0%	87233	5.9%	21	23.6%	738519	14%	2.80%	24.07	250,438 €	60.29	341%	14%	14%					
Nord-est	Trentino Alto Adige / Südtirol	75526	0.3%	23892	1.6%	1	1.1%	75526	100%	0.29%	4.19	75,526 €	3.16	18%	-1%	1%	5.88%	1.61%	5.88%	1.61%	
Centro	Umbria	834626	3.2%	19977	1.3%	2	2.2%	546638	65%	2.08%	10.11	417,313 €	42.20	238%	2%	2%	1.33%	0.19%	1.33%	0.19%	0.19%
Nord-ovest	Valle d'Aosta / Vallée d'Aoste	-	€ 0.0%	2753	0.2%	0	0.0%	-	€ 0%	0.00%	0.00	n.a.	0.00	0%	0%	0%					
Nord-est	Veneto	2893820	11.0%	120758	8.1%	10	11.2%	511035	18%	1.95%	8.28	289,382 €	23.96	135%	3%	3%	8.15%	2.05%	11.89%	40.95%	2.32%
															0.00%	37.74%	41.05%	58.95%			

Source: Compiled by the author with the data referenced at the beginning of this section.

Regional Mobility Efficiency - RME

Marche, Molise and Toscana are the 3 out of 20 regions where the students could, the whole period of three years, receive more funds than average (RME>100%), highlighting the case of Molise which has the highest average RME, 542%. Umbria did not receive any funds in 2014, but was the region with the highest RME in 2015, 754%. Basilicata did not receive any funds in 2014 and had an RME 605% in 2016 (see Table 34).

Lombardia and Puglia were the 2 out of 20 regions with an RME lower than 50% during the whole period of three years. The students in those regions could access less than half the national average of funds. Important to mention is the situation of Liguria and Valle d'Aosta / Vallée d'Aoste. They were the 2 out of 20 regions that did not receive any funds during the mentioned period (see Table 34).

On average, 37.54 % of the students were located in regions with an RME greater than 100%. This means these VET students had access to more KA102 grants than the national average € /student. 11.29 % of the students study in regions that could receive more than twice this average (RME >200%) (see Table 28).

On average, 62.46 % of the students were located in regions with an RME smaller than 100%. This means these VET students had access to less KA102 grants than the national average € /student (see Table 28).

40.64% of the students studied in regions that received less than half of this average (RME <50%) (see Table 28).

TABLE 34 ITALY - REGIONAL MOBILITY EFFICIENCY RME 2014/2016

Region	2014	2015	2016	Average
Abruzzo	191%	69%	11%	90%
Basilicata	**0%**	99%	605%	234%
Calabria	169%	131%	69%	123%
Campania	79%	100%	111%	97%
Emilia-Romagna	156%	161%	143%	153%
Friuli-Venezia Giulia	264%	95%	181%	180%
Lazio	56%	41%	96%	64%
Liguria	**0%**	**0%**	**0%**	**0%**
Lombardia	44%	36%	19%	33%
Marche	204%	268%	217%	229%
Molise	281%	584%	760%	542%
Piemonte	152%	49%	66%	89%
Puglia	28%	15%	24%	22%
Sardegna	134%	**0%**	7%	47%
Sicilia	49%	70%	14%	45%
Toscana	246%	238%	341%	275%
Trentino Alto Adige / Südtirol	11%	64%	18%	31%
Umbria	**0%**	754%	238%	331%
Valle d'Aosta / Vallée d'Aoste	**0%**	**0%**	**0%**	**0%**
Veneto	135%	141%	135%	137%

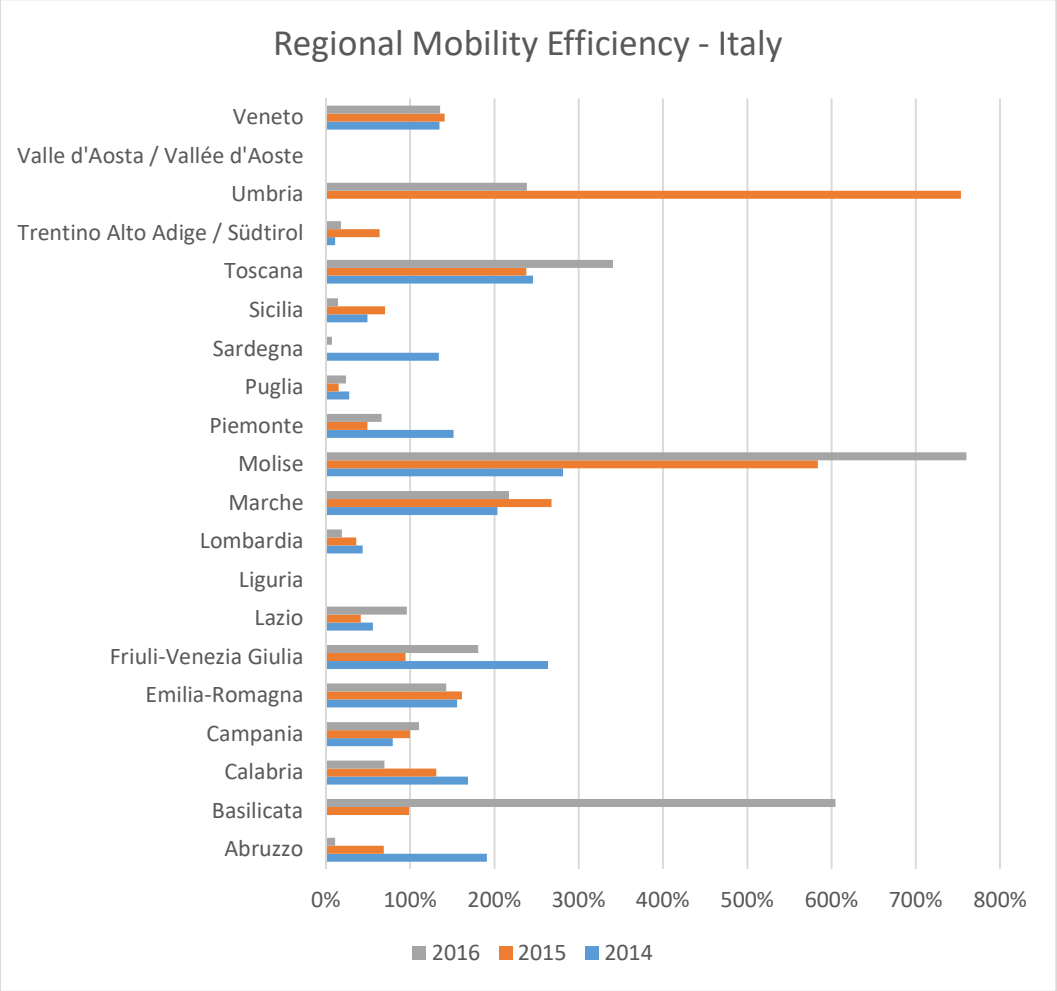
Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 32 ITALY - AVERAGE RME 2014/2016

NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Source: Compiled by the author with the data referenced at the beginning of this section

FIGURE 33 ITALY- REGIONAL MOBILITY EFFICIENCY RME 2014/2016



Source: Compiled by the author with the data referenced at the beginning of this section.

6.4 Spain

6.4.1 Indicators and benchmarks

In 2012, 437,206 upper secondary students studied in Vocational Education and Training programmes in Spain. According to Eurostat, 45.5% of the students enrolled in upper secondary education during 2012 were attending vocational programmes (UOE data collection on education systems, date of extraction, 30.5.2014).

Also according to Eurostat (General government expenditure by function -COFOG- database), the general government expenditure on education as a share of GDP after falling since 2010, stood at 4% in 2013, below the EU average of 5%. As a share of total public expenditure it has slightly decreased from 9.6% in 2011 to 9.1% in 2013.

The VET system in Spain is transforming itself with two major changes; the introduction of basic VET programmes at secondary level and the new dual vocational training studies. The Education and Training Monitor 2015 – Spain (EUROPEAN COMMISSION, 2015 ES, p. 8) mentions:

> *The introduction of basic VET opportunities at an early age (..) might result in greater participation in upper secondary VET, as well as better tutoring and career guidance services at school level. The employment rate for recent upper secondary graduates (People aged 20-34 who left education between one and three years before the reference year) in Spain has fallen by 50% since 2009 reaching its lowest rate of 40.9% in 2013. In 2014, the employment rate for upper secondary graduates has grown again to 54.7%. The participation of adults in lifelong learning stood at 9.8% in 2014, slightly below the EU average of 10.7%.*
>
> *Spain is reforming the VET system to better adapt young people's skills to labour market needs and to increase the attractiveness and acceptance of VET programmes, by reforming the catalogue of diplomas offered both for medium-level and high-level VET and increasing the flexibility of the curricula of medium-level VET programmes.*
>
> *Royal Decree 1529/2012 introduced measures to develop training and apprenticeship contracts (of one to three years depending on the qualifications) and established the legal basis for dual vocational training (work-based training and*

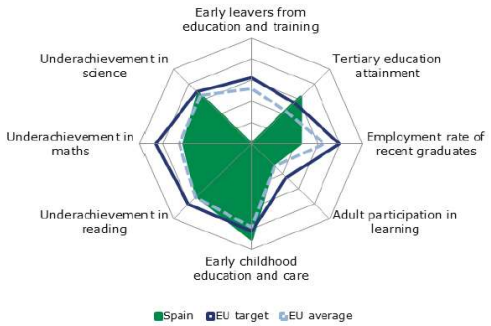
vocational school training, for a range of careers) whereas the implementation rests with the 17 autonomous communities. In 2014/15, dual VET programmes were run in all autonomous communities. The number of educational institutions (728) and companies (4.878) has risen dramatically since the beginning of implementation and the number of students enrolled in dual VET (16.199) has quadrupled since 2012.

FIGURE 34 SPAIN, KEY INDICATORS AND BENCHMARKS

			Spain		EU average	
			2011	2014	2011	2014
Educational poverty and spending cuts: challenges for the education sector						
Share of 15 year-olds with underachievement in:	Reading	•	:	18.3% [12]	:	17.8% [12]
	Maths	•	:	23.6% [12]	:	22.1% [12]
	Science	•	:	15.7% [12]	:	16.6% [12]
Education investment	Public expenditure on education as a percentage of GDP		4.4%	4.0% [13,p]	5.1%	5.0% [13]
	Public expenditure on education as a share of total public expenditure		9.6%	9.1% [13]	10.5%	10.3% [13]
Education attainment levels of young people across Europe						
Early leavers from education and training (age 18-24)	Men		31.0%	25.6% [u]	15.2%	12.7%
	Women		21.5%	18.1% [u]	11.5%	9.5%
	Total	•	26.3%	21.9% [u]	13.4%	11.1%
Tertiary education attainment (age 30-34)	Men		37.2%	36.8%	31.0%	33.6%
	Women		46.7%	47.8%	38.7%	42.3%
	Total	•	41.9%	42.3%	34.8%	37.9%
Policy levers for inclusiveness, quality and relevance						
Early childhood education and care (participation from age 4 to starting age of compulsory education)		•	97.7%	97.1% [13]	93.2%	93.9% [13]
Teachers' participation in training	Any topic (total)		:	84.3% [13]	:	84.6% [13]
	Special needs education		:	19.6% [13]	:	32.4% [13]
	Multicultural settings		:	25.1% [13]	:	13.2% [13]
	ICT skills for teaching		:	68.2% [13]	:	51.0% [13]
Foreign language learning	Share of ISCED 2 students learning two or more foreign languages		40.3%	41.9% [12]	63.0%	: [12]
Share of ISCED 3 students in vocational education and training (VET)			45.3%	33.5% [13,b]	50.4%	48.9% [13]
Employment rate of recent graduates by education attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4		51.9%	54.7%	71.3%	70.8%
	ISCED 5-8		72.5%	68.6%	82.5%	80.5%
	ISCED 3-8 (total)	•	67.1%	65.1%	77.1%	76.1%
Learning mobility	Inbound graduates mobility (bachelor)		:	0.6% [13]	:	: [13]
	Inbound graduates mobility (master)		:	4.7% [13]	:	: [13]
Adult participation in lifelong learning (age 25-64)	ISCED 0-8 (total)	•	11.0%	9.8% [b]	8.9%	10.7%

Sources: Eurostat (LFS, UOE, GFS); OECD (PISA, TALIS). Notes: • ET 2020 benchmark; data refer to weighted EU average, covering a different number of Member States depending on the source; b= break in time series, d= definition differs, p= provisional, u= low reliability, [12]= 2012, [13]= 2013. Further information is found in the respective section of Volume 1 (ec.europa.eu/education/monitor).

Figure 1. Position in relation to highest (outer ring) and lowest performers (centre)



Source: DG Education and Culture calculations, based on data from Eurostat (LFS 2014 and UOE 2013) and OECD (PISA 2012, TALIS 2013). *Note:* all scores are set between a maximum (the highest performers visualised by the outer ring) and a minimum (the lowest performers visualised by the centre of the figure).

Source: (EUROPEAN COMMISSION, 2015 ES, p. 2).

6.4.2 VET Studies and certificates

The *Ministerio de Educación, Cultura y Deporte* (Ministry of Education, Culture and Sport), the *Comunidades Autónomas* (Autonomous Communities), the *SEPE* (Public Employment Service) and the social partners share VET governance and decision-making. The reforms from 2002 tried to unify the until that time fragmented VET standards.

The *Catálogo Nacional de Cualificaciones Profesionales* (National Professional Qualifications Catalogue) is the guideline for the VET studies. Each of the VET studies focuses on enabling the students to achieve one or more of the qualifications mentioned in this catalogue.

More than half of the working population does not hold an official certificate that demonstrates their professional qualification (CEDEFOP, 2010 ES).

The 2009 decree on the recognition of occupational competences acquired through work experience or non-formal learning established a procedure to assess and accredit people´s competences relating to the competence units of the *Catálogo Nacional de Cualificaciones Profesionales.*

The network of *Centros de Referencia Nacional* (National Reference Centres), keeps track of market changes and makes proposals of skills needed in the future. It also acts as a link between training institutions, the productive sector and the professional qualifications system.

Education is compulsory up to the age of 16. While the rate of 30 to 34 year-olds with tertiary level degrees in 2008 (39,8%) is close to the new EU 40% benchmark set for 2020, the EU maximum of 10% of early school leavers is still out of reach: in Spain this is 31,9% of the population between 18 and 24 years old. This rate varies considerably across regions (CEDEFOP, 2010 ES).

As mentioned in the CEDEFOP document "Spotlight on VET-SPAIN" (CEDEFOP, 2010 ES) the structure of VET in Spain combines initial VET within the education system as well as continuing VET for employed and unemployed people (*formación profesional para el empleo).*

The following are the iVET studies that are offered in Spain (CEDEFOP, 2010 ES), (CEDEFOP, 2014 ES):

LOWER SECONDARY LEVEL

***Formación Profesional Básica*, Basic level VET**

Students that have passed their second year of *Educación Secundaria Obligatoria* (Secondary education) can choose to access these studies that combine modules that focus on professional skills and general education. This two-year programme enables the students to access the labour market and/or continue their studies with the *Ciclos formativos de Grado Medio*.

UPPER SECONDARY LEVEL

***Ciclos formativos de Grado Medio*, Intermediate level VET**

Courses that include between 1300 to 2000 hours of training modules offered among 26 professional sectors of the national qualifications catalogue (*Catálogo Nacional de Cualificaciones Profesionales – CNCP*). Students acquire occupational and transversal skills and work experience (mandatory). Completion of all modules leads to a technician diploma *Título de Técnico* in the corresponding occupation. Students can decide to start working in their new profession and/or continue studying *Ciclos formativos de Grado Superior* (Advanced

Level VET). Students that want to study *Ciclos formativos de Grado Medio* need to hold the *Graduado en Educación Secundaria Obligatoria* (Certificate in compulsory secondary education) or have passed the studies of *Formación Profesional Básica* (Basic level VET). Students can choose to attend these studies only at schools or on a dual basis (*Formación professional dual*), combining training at the work place and school lectures. Dual studies can take up to 3 years to complete.

***Título de Técnico de Artes Plásticas y Diseño, Título de Técnico de Enseñanzas Deportivas*, Intermediate level arts and sports programmes**

These studies are available for students at the age of 12 and lead to the diplomas *Título de Técnico de Artes Plásticas y Diseño* and *Título de Técnico de Enseñanzas Deportivas*. Students have the possibilty to achieve the *Título de Bachiller* (Baccalaureate). These studies include music, drama and dance programmes.

HIGHER EDUCATION

***Ciclos formativos de Grado Superior*, Higher level VET**

These courses include at least 2000 hours and follow the structure based on modules of the *Ciclos formativos de Grado Medio*. Completion of all modules leads to a technician diploma *Título de Técnico Superior* in the corresponding occupation. This diploma gives direct access to undergraduate university studies. Students that want to study *Ciclos formativos de Grado Superior* need to hold the *Título de Bachiller* (Baccalaureate) or a technician diploma *Título de Técnico*. Since 2011, these studies are part of the first of the four levels of the Spanish higher education qualifications framework (MECES). The modules are recognised in the European Credit Transfer System, ECTS. Students can choose to attend these studies only at schools or

on a dual basis (*Formación professional dual*), combining training at the work place and school lectures. Dual studies can take up to 3 years to complete.

OTHER COURSES

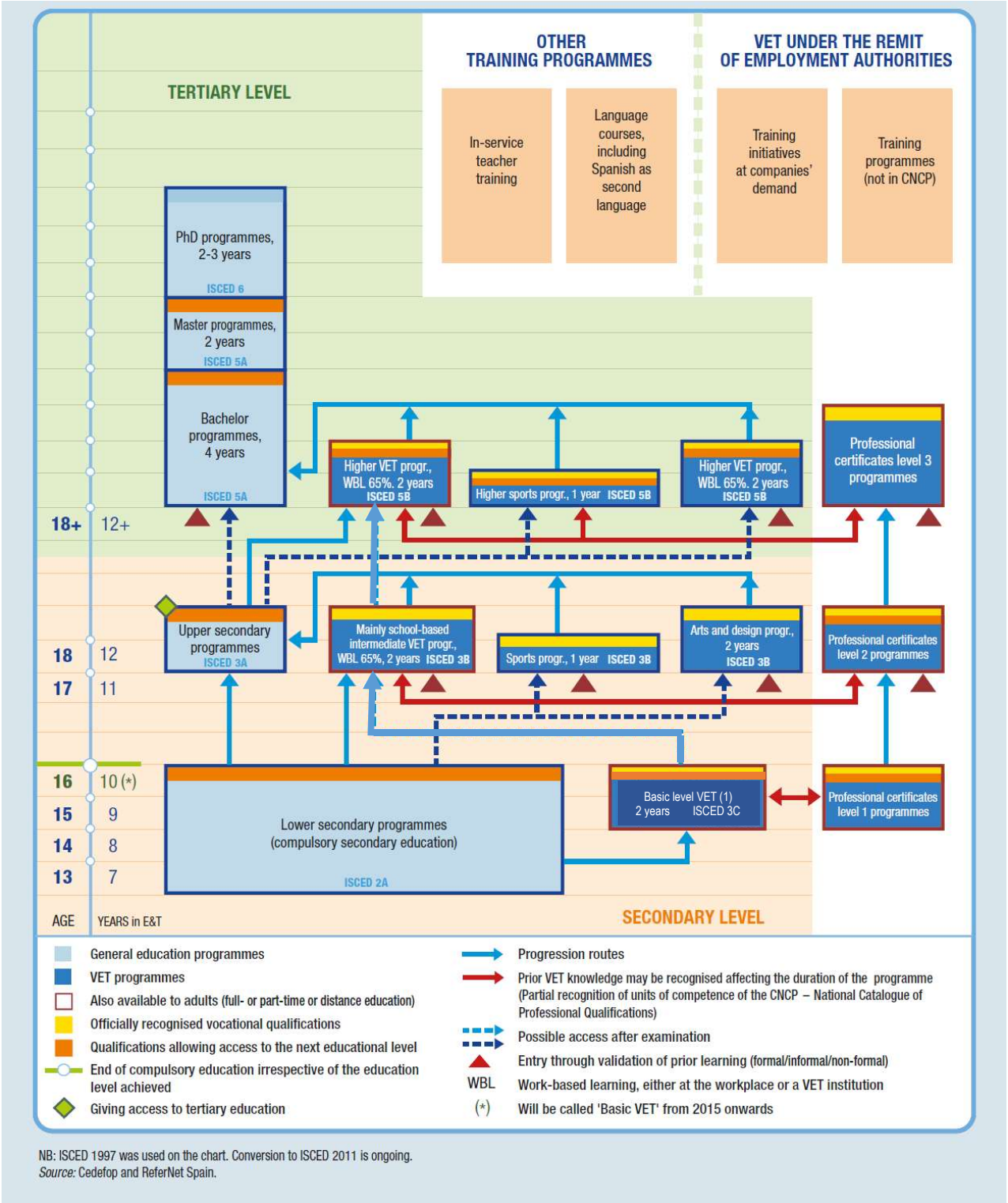
***Escuelas taller, talleres de empleo y casas de oficio*, Workshop schools and craft centres**

Courses focused on the unemployed that combine training in the classroom and at the workplace

***Certificados de profesionalidad*, Professional certificates**

Adults that have been working in a specific profession can achieve *Certificados de profesionalidad* through exams and work experience.

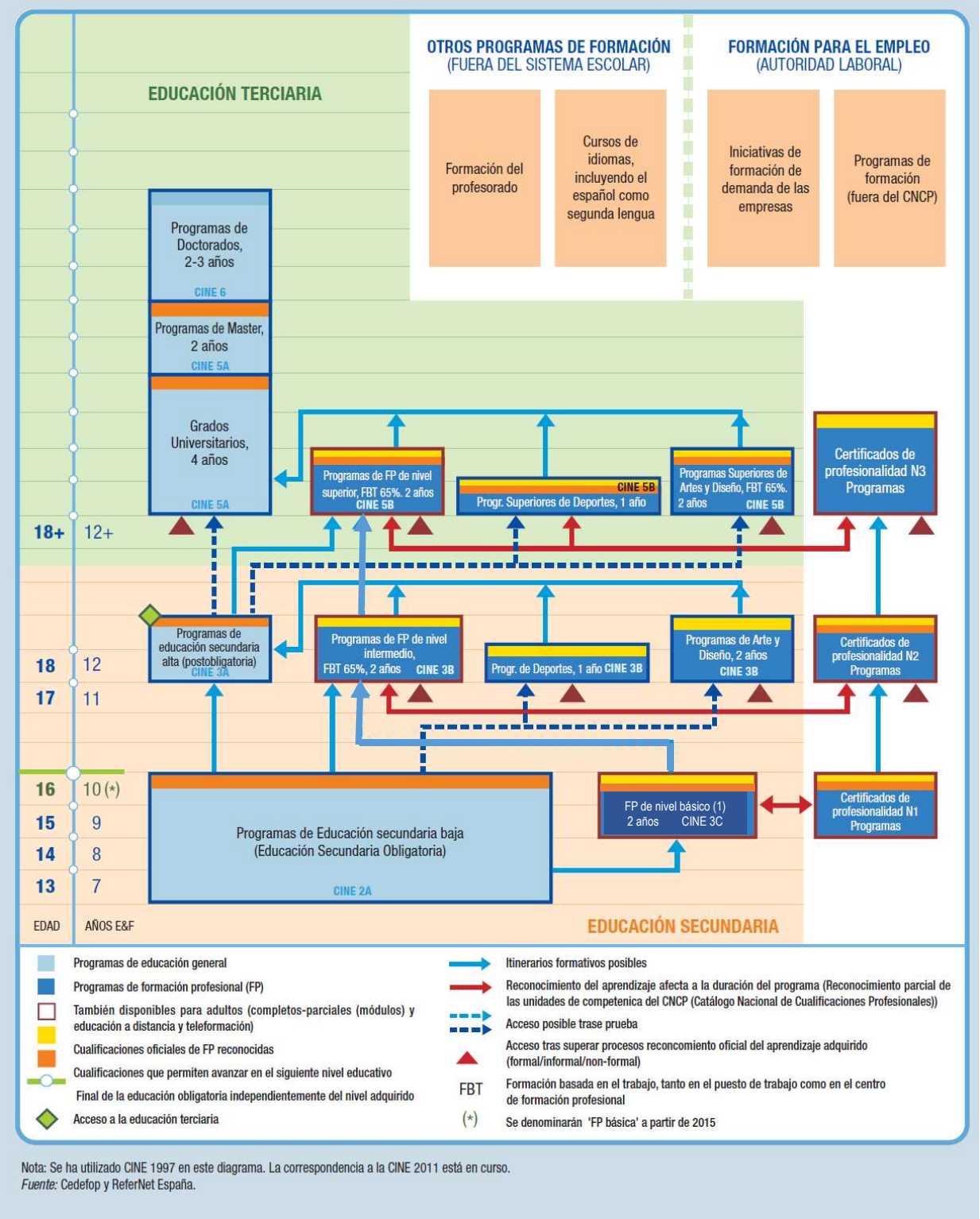
FIGURE 35 VET IN SPAIN, ENGLISH VERSION



NB: ISCED 1997 was used on the chart. Conversion to ISCED 2011 is ongoing.
Source: Cedefop and ReferNet Spain.

Source: (CEDEFOP, 2014 ES), English version, (1) updated 2015 by the author.

FIGURE 36 VET IN SPAIN, SPANISH VERSION



Nota: Se ha utilizado CINE 1997 en este diagrama. La correspondencia a la CINE 2011 está en curso.
Fuente: Cedefop y ReferNet España.

Source: (CEDEFOP, 2014 ES), Spanish version, (1) updated 2015 by the author.

6.4.3 National Qualifications Framework

Spain is still developing its *Marco Español de Cualificaciones – MECU* (Spanish NQF). The *Marco Español de Cualificaciones* will have eight levels matching the EQF levels and will combine the *Catálogo Nacional de Cualificaciones Profesionales – CNCP* (National catalogue of professional qualifications) and the *Marco Español de Cualificaciones para la Educación Superior – MECES* (QF- EHEA).

In 2003, with the Royal Decree 1128/2003 the process to create the *Catálogo Nacional de Cualificaciones Profesionales – CNCP* (National catalogue of professional qualifications) began. It is divided in five levels, but the relation between these levels and those of the MECU and the EQF still has not been officially established. At the present moment, this catalogue includes more than 600 qualifications assigned to 26 *familias profesionales* (professional areas) at levels one, two and three. Levels four and five have not been developed. This catalogue is under the supervision of the *Instituto Nacional de Cualificaciones – INCUAL* (National qualifications institute).

The Royal Decree 1027/2011 regulates the *Marco Español de Cualificaciones para la Educación Superior – MECES*, the qualifications framework for higher education, taking into account the Dublin descriptors.

The first level of the MECES coincides with the third level of the CNCP, namely describing the studies *Técnico Superior* that correspond to higher VET studies.

MECU is based on learning outcomes and will link different education and training systems. It will include qualifications obtained in compulsory education, in post-secondary and higher education and will integrate validation of non-formal and informal learning processes (CEDEFOP, 2012 NQF, pp. 204-207).

The Royal decree 1224/2009 regulates the procedures for the validation of professional competences acquired through non-formal and informal learning and professional experience. The *Catálogo Nacional de Cualificaciones Profesionales – CNCP* (National catalogue of professional qualifications) is the framework used for the validation of these competences.

The Ministry of Education is responsible for the process of the NQF development, (MECU and MECES). The *Dirección General de la Formación Profesional* (Directorate for Vocational Training) of the Ministry of Education is the Spanish National Contact Point – NCP.

FIGURE 37 CORRESPONDENCE BETWEEN THE SPANISH NQF/MECU AND THE EQF

MECES / QF-EHEA (a)	Academic level	CNCP / NQF (b)(c)	Academic level	MECU (d)	EQF
4	Doctor			8	8
3	Máster	5	Pending	7	7
2	Graduado	4	Pending	6	6
1	Técnico Superior	3	Técnico Superior	5	5
		2	Técnico medio	4	4
				3	3
		1	Operario	2	2
		1	*Operario*	1	1

(a) Royal Decree 1027/2011 (SPANISH GOVERNMENT, 2011) The official assignment of CNCP, NQF, MECU and EQF levels is still pending. There is a major discussion at levels 1 and 2 of the CNCP to decide the corresponding MECU/ EQF levels. Documents (b) (CONFEDERACIÓN DE EMPRESARIOS DE ANDALUCÍA, 2012) and (c) (Gordillo, 2006, p. 26) provide an overview of the different opinion trends (MECD, 2015).

Source: Table created by the author with information based on the mentioned sources.

6.4.4 ECTS and ECVET credit system

The ECTS credit system is already being used in the Spanish Higher Education studies, including the HE VET studies at EQF level 5, ISCED 5B, namely the *Formación Profesional de Grado Superior*.

These HE VET studies are divided in modules that can be certified separately. Their legal regulation describes how many ECTS will be awarded for each module.

The development of ECVET for *Formación Profesional de Grado Medio*, ISCED 3B iVET studies in Spain is still underway. (CEDEFOP, 2014).

cVET programmes lead to certificates in the *repertorio nacional de certificados de profesionalidad* – list of professional certificates- and the iVET programmes award the *títulos de formación profesional* – VET diplomas.

The *catálogo nacional de cualificaciones profesionales, CNCP* – national catalogue of professional qualifications – is the reference point used for iVET by the Ministry of Education, Culture and Sports and by the Ministry of Employment and Social Security for the cVET programmes. These qualifications are assigned to credit units that form the VET modules. These modules are linked to the CNCP, are separately assessed and certified taking into account the learning outcomes and can be the fragments of an iVET diploma and/or cVET certificate. The iVET diplomas are designed by the Ministry of Education, Culture and Sport. The regional authorities train the teachers, the teachers assess the learning outcomes, the VET schools certify the modules, and the education administrations issue the corresponding diplomas (CEDEFOP, 2014).

The diplomas and professional certificates structure the transfer system. These diplomas and certificates mention the modules that can be relocated in the different iVET and cVET

programmes. Non-formal and informal learning can also be validated using the CNCP reference framework.

This can be done with:

> *(a) exemption from on-the-job training modules where students prove previous work experience in the field;*
>
> *(b) access to exams to acquire an iVET diploma;*
>
> *(c) partial certification and formative assessment to acquire a full certificate or diploma* (CEDEFOP, 2014).

The mentioned Spanish credit transfer system is compatible with the technical specifications of ECVET. Nevertheless, the political initiatives to implement ECVET within iVET are currently on hold, pending the final endorsement of the NQF. Once the political decisions are taken, it will be a straightforward process to adapt the current credit system to ECVET (CEDEFOP, 2013).

6.4.5 EQAVET quality assurance

The *Ley Orgánica de la Educación* 2/2006, of 3 May (Education Law) establishes that the public authorities are competent and responsible for the inspection of the Education System. The *Ministerio de Educación, Cultura y Deporte* (Ministry of Education, Culture and Sport) and the *Consejerías de Educación de las Comunidades Autónomas* (Education Regional Departments of the Autonomous Communities) are involved in the Quality Assurance (QA) in Vocational Education and Training (EQAVET Secretariat, 2015 ES A).

The Royal Decree 1147/2011, 29th July, on the General Organization of Vocational Education and Training in the Education System, dedicates three articles to quality in IVET:

> *1. Actions and measures to foster innovation and quality.*
>
> *2. Establishment of both the Reference Framework for Quality Assurance in IVET and the National Reference Point.*
>
> *3. Development of a Quality Network for IVET, jointly with the Autonomous communities.*

The *Comunidades Autónomas* (Autonomous Communities) may establish their own standards so they can develop their own quality assurance systems in line with international standards such as EFQM or ISO standards.

The *Instituto Nacional de Evaluación Educativa – INEE* (National Institute for the Evaluation of the Education System - NIEES) is the institution responsible for the evaluation of the education system in the *Ministerio de Educación, Cultura y Deporte* and works in collaboration with the *Comunidades Autónomas*. Its tasks are:

- *elaborating multiannual projects of general assessment of the educational system;*
- *coordinating the participation of the Spanish State in international evaluations;*
- *elaborating the National System of Education Indicators that will contribute to the knowledge of the educational system and to direct the decision-making of educational institutions and of all the sectors involved in education;*

- *collaborating in the realisation of general diagnostic assessments, which permit one to obtain representative data, as well from students and centres of the Autonomous Communities as from the whole State, in the framework of general assessment of the educational system*

  (EQAVET Secretariat, 2015 ES A)

The *Instituto Nacional de las Cualificaciones - INCUAL* (National Qualifications Institute) is the technical agency that helps the *Consejo General de Formación Profesional* (General Council on Vocational Training) to pursue the objectives of the *Sistema Nacional de Cualificaciones y Formación Profesional* (National System for Occupational Standards and Vocational Education and Training). INCUAL manages and updates the *catálogo nacional de cualificaciones profesionales, CNCP* (national catalogue of professional qualifications).

The *Servicio Público de Empleo Estatal SEPE* (State Public Employment Service) is entrusted with the planning, development and follow-up of the programmes and measures of the Employment Policy in the framework of the legislation. In cooperation with the regional governments elaborates and executes an annual evaluation plan regarding the quality, effectiveness, efficiency and impact of the system of vocational training for employment, cVET, and the identification of aspects susceptible to be improved (EQAVET Secretariat, 2015 ES A)

The *Fundación Tripartita* (Tripartite Foundation) is formed by the Public Administration (represented through the *Ministerio de Empleo y Seguridad Social* - Ministry of Employment and Social Security and the *Comunidades Autónomas*), business associations and trade unions and works with SEPE in vocational training for employment, cVET, programmes (EQAVET Secretariat, 2015 ES A).

6.4.6 Erasmus+ VET Mobility

The Spanish Erasmus+ National Agency *SEPIE* (formerly *OAPEE*), awarded during the period 2014/2016 Erasmus+ KA102 / 116 VET funds to 819 projects proposed by 504 different institutions. 17% of these institutions received funds at the calls of the three years. The average amount of projects per institution was 1.63 (see Table 37).

In 2014 the amount of 21,803,090 € in KA 102 grants was distributed to 220 projects, in 2015 the total of 21,605,968 € went to 309 projects and in 2016, round 1, the amount of 16,729,673 € was assigned to 290 projects. Spain still has a part of the 2016 budget that will be assigned in a second funding round, at the end of the year (see Table 35).

82.69% Students with a Fair Access to Funds – SFAF, (see Equation 2) of all the Spanish students had the possibility to benefit, during 2014, from a standard amount of KA 102 grants, RME between 50% and 200% (see Equation 1), 91,93% in 2015, 88.5% in 2016 (round 1), making an average in the period of SFAF=87.70% (see Table 36).

The National Equity - NE (see Equation 3) determines if the funds have been mathematically equally distributed, meaning NE=100% that all the students had equal chances to receive funds and NE=0% that no students had access to funds. In the case of Spain, the National Equity was 79.65% in 2014, 83.44% in 2015 and 80.65% in 2016 (round 1). The average value for the period was NE=81.25% (see Table 36).

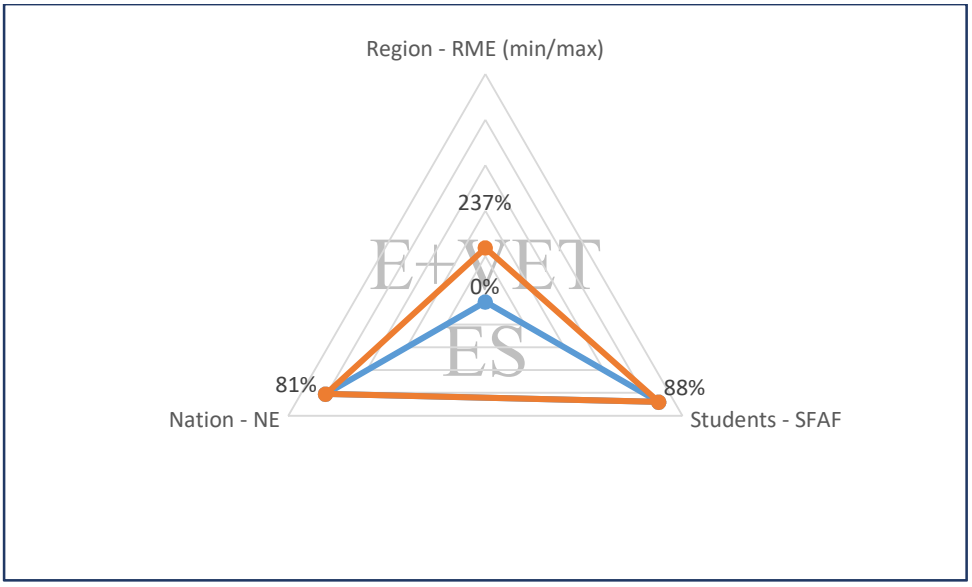
On average, during the whole period the amount received per project was 75,572 € and each of the most frequent-sized projects received 0,1% of the total national budget. There were on average 27% of these frequent-sized projects that received the last 9% of the national budget (see Table 35).

The first 20% of the national budget was awarded to the 6 (on average) biggest projects. These projects represent 2 % of all the projects (see Table 35).

The first 50% of the national budget was awarded to the 30.3 (on average) biggest projects. These projects represent 11 % of all the projects (see Table 35).

During the period 2014-2016 the region of Galicia had the maximum Regional Mobility Efficiency, RME=237% and Cantabria the minimum, RME=10% (see Table 41).

FIGURE 38 SPAIN- REGIONAL, STUDENTS´ AND NATIONAL 2014/2016 AVERAGE VALUES



Source: Compiled by the author with data from Table 36 and Table 41 (RME values presented 10 times smaller).

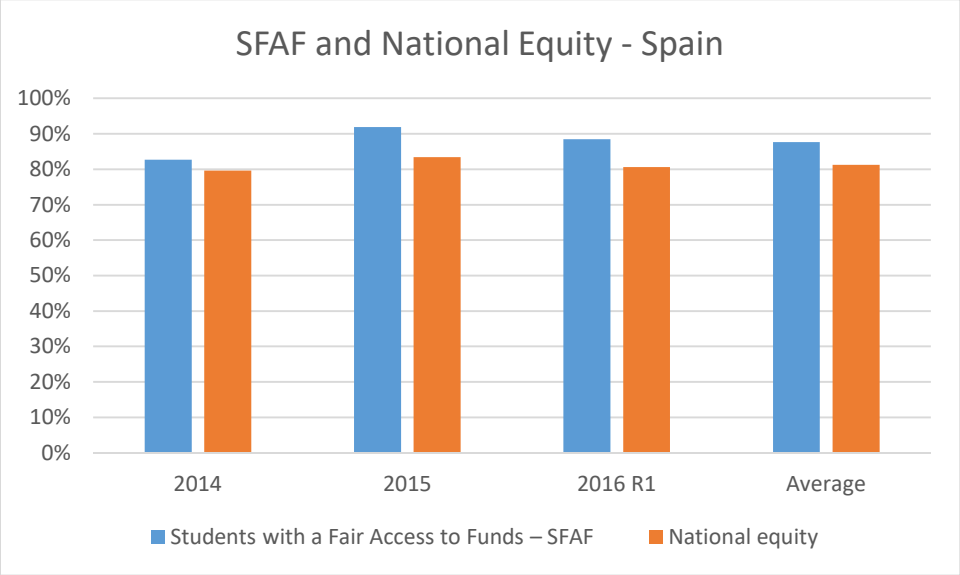
The funding data of years 2014, 2015 and 2016 was provided by the Spanish Erasmus+ National Agency *SEPIE* (formerly *OAPEE*) (SEPIE, 2016). The information about the amount of students in each region was provided by (MECD, 2015 B). This data was used to perform the estimations and create the graphs available in this section and section 7.4.

TABLE 35 SPAIN - MONITORING ERASMUS+ VET 2014/2016

	2014	2015	2016 R1	Average
National budget	21,803,090 €	21,605,968 €	16,729,673 €	20,046,244 €
Number of projects	220	309	290	273
Biggest Project	2,004,905 €	1,139,952 €	468,551 €	1,204,469 €
Smallest Project	3,870 €	2,930 €	1,941 €	2,914 €
Average Project	99,105 €	69,922 €	57,689 €	75,572 €
Projects / Region	11.58	16.26	15.26	14.37
€/ Region	1,147,531 €	1,137,156 €	880,509 €	1,055,065 €
Amount of projects that represent 20% of the budget	5	8	5	6
… percentage of nations total	2%	3%	2%	2%
Amount of projects that represent 50% of the budget	25	38	28	30.3
… percentage of nations total	11%	12%	10%	11%
Most frequent size, in % of national budget	0.1%	0.1%	0.1%	0.1%
amount of frequent size projects	57	97	107	87
amount of frequent size projects, % over total	11%	31%	37%	27%
… and represent % of the total budget	6%	9%	11%	9%
Students in regions with more than the national average budget	29.37%	56.71%	42.74%	42.94%
Students in regions with less than the national average budget	70.63%	43.29%	57.26%	57.06%
Students in regions with more than double the national average budget	7.36%	0.33%	6.20%	4.63%
Students in regions with less than half the national average budget	9.95%	7.75%	5.30%	7.67%
Students in regions with no access to funds	1.50%	0.00%	0.00%	0.50%
Students with a Fair Access to Funds – SFAF	**82.69%**	**91.93%**	**88.50%**	**87.70%**
National equity	**79.65%**	**83.44%**	**80.65%**	**81.25%**
Regions	19	19	19	19
Regions with biggest project greater than 30% of the regional budget	11	9	11	10
… percentage of nations total	57.89%	47.37%	57.89%	54.39%
Regions with biggest project greater than 50% of the regional budget	5	4	7	5
… percentage of nations total	26.32%	21.05%	36.84%	28.07%
Institutions that have always received funds (2014/2016)				**17%**
Average projects per institution (2014/2016)				**1.63**

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 39 SPAIN - SFAF AND NATIONAL EQUITY 2014/2016



Source: Compiled by the author with the data referenced at the beginning of this section.

TABLE 36 SPAIN - SFAF AND NATIONAL EQUITY 2014/2016

	2014	2015	2016 R1	Average
Students with a Fair Access to Funds – SFAF	83%	92%	88%	88%
National Equity	80%	83%	81%	81%

Source: Compiled by the author with the data referenced at the beginning of this section.

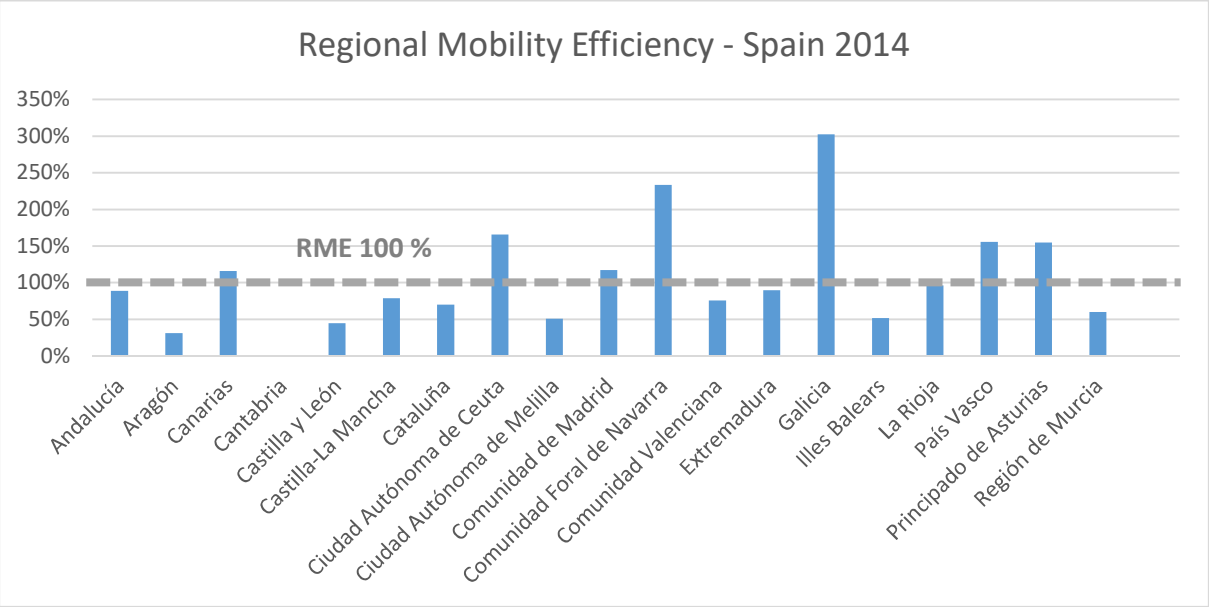
TABLE 37 SPAIN - TIMES AN INSTITUTION HAS BEEN FUNDED 2014/2016

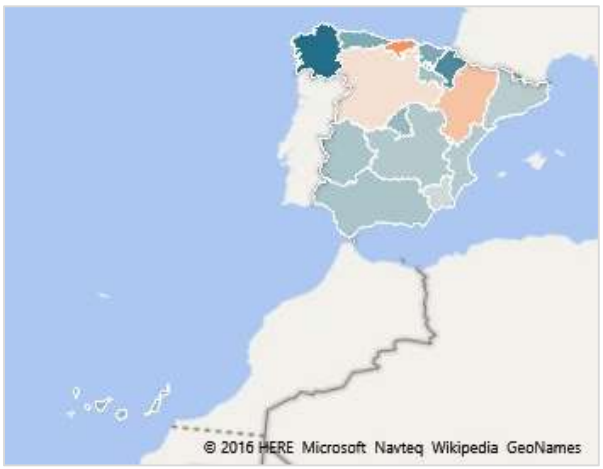
	Times an institution has been funded 2014/2016						
Region	Once	Twice	Always	Always (% of regional institutions)	Institutions in the region	Institutions from national total	Regional regularity
Andalucía	60	25	7	8%	92	18%	0.42
Aragón	13	4	2	11%	19	4%	2.79
Canarias	17	12	7	19%	36	7%	2.72
Cantabria	3	1	0	0%	4	1%	0.00
Castilla y León	8	3	2	15%	13	3%	5.96
Castilla-La Mancha	19	6	10	29%	35	7%	4.11
Cataluña	16	10	6	19%	32	6%	2.95
Ciudad Autónoma de Ceuta	1	0	1	50%	2	0%	126.00
Ciudad Autónoma de Melilla	2	2	0	0%	4	1%	0.00
Comunidad de Madrid	28	18	16	26%	62	12%	2.10
Comunidad Foral de Navarra	1	1	1	33%	3	1%	56.00
Comunidad Valenciana	32	17	7	13%	56	11%	1.13
Extremadura	12	6	7	28%	25	5%	5.64
Galicia	21	12	6	15%	39	8%	1.99
Illes Balears	14	4	1	5%	19	4%	1.40
La Rioja	2	4	0	0%	6	1%	0.00
País Vasco	13	10	4	15%	27	5%	2.77
Principado de Asturias	3	5	4	33%	12	2%	14.00
Región de Murcia	9	5	4	22%	18	4%	6.22
Total institutions	274	145	85	17%	504	100%	0.17
Total projects	274	290	255		819		

Source: Compiled by the author with the data referenced at the beginning of this section. The regional regularity is the percentage of regional institutions that have always received funds divided by the percentage of regional institutions from the national total.

During the period 2014/2016, 85 out of 504 institutions, situated in 16 out of the 19 regions, were funded each of the three years. Andalucia had 18% of all the funded institutions and, as 8% of its institutions always received funds, this region has one of the lowest Regional regularities, 0.42. Worse were the situations of Cantabria, Ciudad Autónoma de Melilla and La Rioja that did not have any institutions receiving funds during the whole period.

FIGURE 40 SPAIN – ERASMUS+ VET RME 2014





NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Region	RME 2014
Andalucía	89%
Aragón	31%
Canarias	116%
Cantabria	**0%**
Castilla y León	45%
Castilla-La Mancha	79%
Cataluña	70%
Ciudad Autónoma de Ceuta	166%
Ciudad Autónoma de Melilla	51%
Comunidad de Madrid	117%
Comunidad Foral de Navarra	234%
Comunidad Valenciana	76%
Extremadura	89%
Galicia	302%
Illes Balears	52%
La Rioja	96%
País Vasco	156%
Principado de Asturias	155%
Región de Murcia	60%

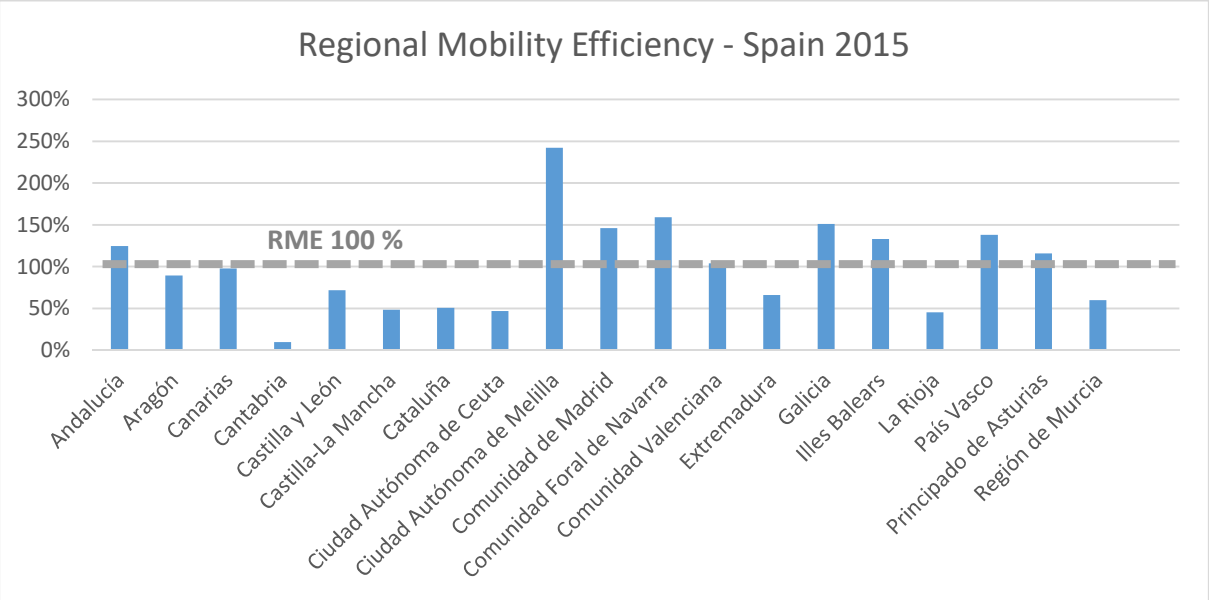
Source: Compiled by the author with the data referenced at the beginning of this section.

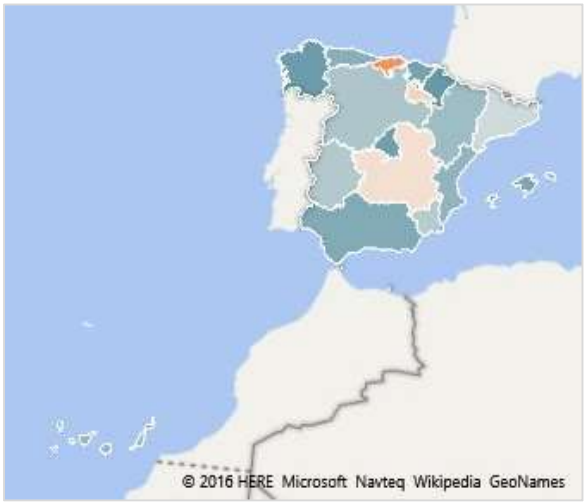
TABLE 38 SPAIN – ERASMUS+ VET REGIONAL DATA 2014

SPAIN 2014	Budget	% from total budget	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects per 100 K Students	€ / Project	€ / Student	Regional Efficiency RME	Mobility	Inequity	Inequity	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
Andalucía	3,487,087 €	16.0%	78,766	18.0%	33	15.0%	502,906 €	14%	2.31%	41.90	105,669 €	44 €	89%	-2%	-2%	2%		18.02%			
Aragón	186,997 €	0.9%	12,175	2.8%	4	1.8%	71,222 €	38%	0.33%	32.85	46,749 €	15 €	31%	-2%	-2%	2%		2.78%		2.78%	
Canarias	1,364,474 €	6.3%	23,644	5.4%	15	6.8%	174,271 €	13%	0.80%	63.44	90,965 €	58 €	116%	1%	1%	1%	5.41%				
Cantabria	- €	0.0%	6,563	1.5%	0	0.0%	- €	0%	0.00%	0.00	- €	- €	0%	-2%	-2%	2%		1.50%			1.50%
Castilla y León	549,771 €	2.5%	24,764	5.7%	4	1.8%	336,039 €	61%	1.54%	16.15	137,443 €	22 €	45%	-3%	-3%	3%		5.66%		5.66%	
Castilla-La Mancha	866,982 €	4.0%	22,133	5.1%	17	7.7%	264,116 €	30%	1.21%	76.81	50,999 €	39 €	79%	-1%	-1%	1%		5.06%			
Cataluña	2,373,024 €	10.9%	68,113	15.6%	15	6.8%	814,510 €	34%	3.74%	22.02	158,202 €	35 €	70%	-5%	-5%	5%		15.58%			
Ciudad Autónoma de Ceuta	134,308 €	0.6%	1,626	0.4%	2	0.9%	88,098 €	66%	0.40%	123.00	67,154 €	83 €	166%	0%	0%	0%	0.37%				
Ciudad Autónoma de Melilla	35,964 €	0.2%	1,422	0.3%	1	0.5%	35,964 €	100%	0.16%	70.32	35,964 €	25 €	51%	0%	0%	0%		0.33%			
Comunidad de Madrid	2,576,319 €	11.8%	44,022	10.1%	32	14.5%	421,965 €	16%	1.94%	72.69	80,510 €	59 €	117%	2%	2%	2%	10.07%				
Comunidad Foral de Navarra	591,419 €	2.7%	5,078	1.2%	2	0.9%	546,252 €	92%	2.51%	39.39	295,710 €	116 €	234%	2%	2%	2%	1.16%		1.16%		
Comunidad Valenciana	2,076,889 €	9.5%	55,103	12.6%	20	9.1%	498,232 €	24%	2.29%	36.30	103,844 €	38 €	76%	-3%	-3%	3%		12.60%			
Extremadura	523,017 €	2.4%	11,725	2.7%	13	5.9%	169,696 €	32%	0.78%	110.87	40,232 €	45 €	89%	0%	0%	0%		2.68%		6.20%	
Galicia	4,089,086 €	18.8%	27,121	6.2%	18	8.2%	2,004,905 €	49%	9.20%	66.37	227,171 €	151 €	302%	13%	13%	13%	6.20%				
Illes Balears	245,521 €	1.1%	9,520	2.2%	6	2.7%	87,014 €	35%	0.40%	63.03	40,920 €	26 €	52%	-1%	1%	1%		2.18%			
La Rioja	169,978 €	0.8%	3,546	0.8%	4	1.8%	102,833 €	60%	0.47%	112.80	42,495 €	48 €	96%	0%	0%	0%		0.81%			
País Vasco	1,424,874 €	6.5%	18,362	4.2%	14	6.4%	577,107 €	41%	2.65%	76.24	101,777 €	78 €	156%	2%	2%	2%	4.20%				
Principado de Asturias	658,520 €	3.0%	8,541	2.0%	10	4.5%	236,245 €	36%	1.08%	117.08	65,852 €	77 €	155%	1%	1%	1%	1.95%				
Región de Murcia	448,860 €	2.1%	14,982	3.4%	10	4.5%	82,594 €	18%	0.38%	66.75	44,886 €	30 €	60%	-1%	0.00%	1%	29.37%	70.63%	7.36%	9.95%	1.50%

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 41 SPAIN – ERASMUS+ VET RME 2015





NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Region	RME 2015
Andalucía	125%
Aragón	89%
Canarias	98%
Cantabria	10%
Castilla y León	72%
Castilla-La Mancha	49%
Cataluña	51%
Ciudad Autónoma de Ceuta	47%
Ciudad Autónoma de Melilla	242%
Comunidad de Madrid	146%
Comunidad Foral de Navarra	159%
Comunidad Valenciana	104%
Extremadura	66%
Galicia	151%
Illes Balears	133%
La Rioja	46%
País Vasco	138%
Principado de Asturias	116%
Región de Murcia	60%

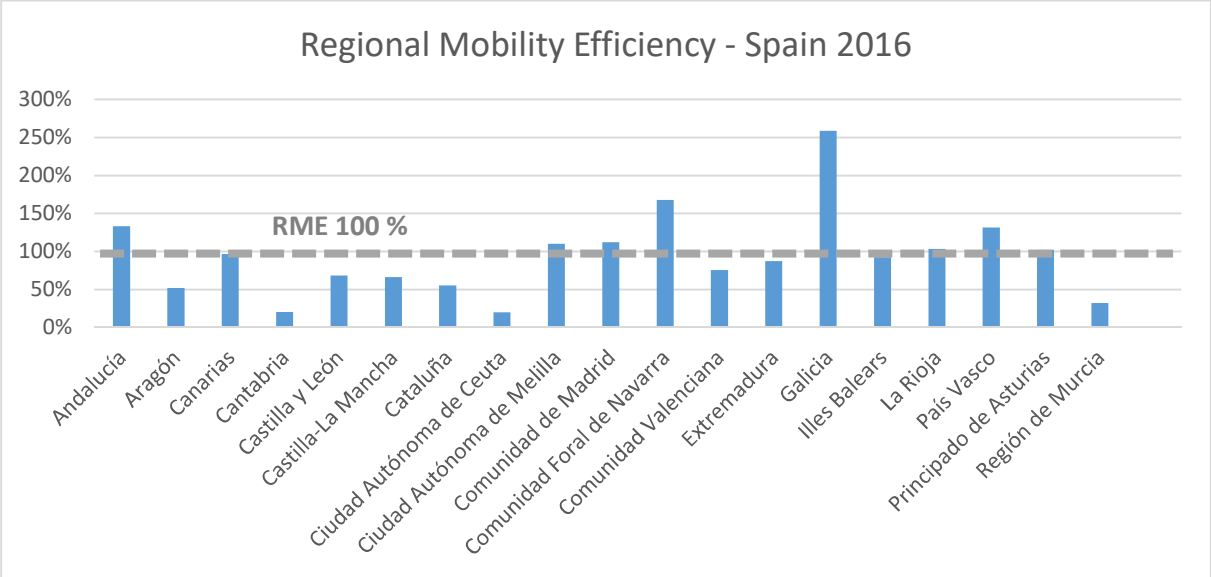
Source: Compiled by the author with the data referenced at the beginning of this section.

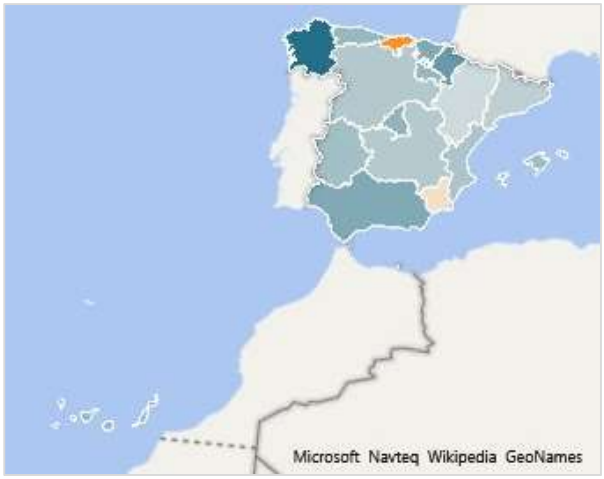
TABLE 39 SPAIN - ERASMUS+ VET REGIONAL DATA 2015

SPAIN 2015	Budget	% from total budget	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects per 100 K Students	€ / Project	€ / Student	Regional Mobility Efficiency RME	Inequity	Inequity	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
Andalucía	4,856,693 €	22.5%	78,766	18.0%	49	15.9%	492,250 €	10%	2.3%	62.21	99,116 €	62 €	125%	4%	4%	18.02%				
Aragón	538,236 €	2.5%	12,175	2.8%	14	4.5%	115,282 €	21%	0.5%	114.99	38,445 €	44 €	89%	0%	0%		2.78%			
Canarias	1,145,559 €	5.3%	23,644	5.4%	22	7.1%	188,580 €	16%	0.9%	93.05	52,071 €	48 €	98%	0%	0%		5.41%			
Cantabria	31,016 €	0.1%	6,563	1.5%	3	1.0%	15,416 €	50%	0.1%	45.71	10,339 €	5 €	10%	-1%	1%		1.50%			1.50%
Castilla y León	878,553 €	4.1%	24,764	5.7%	9	2.9%	318,098 €	36%	1.5%	36.34	97,617 €	35 €	72%	-2%	2%		5.66%			
Castilla-La Mancha	531,912 €	2.5%	22,133	5.1%	19	6.1%	124,717 €	23%	0.6%	85.84	27,995 €	24 €	49%	-3%	3%		5.06%			5.06%
Cataluña	1,705,483 €	7.9%	68,113	15.6%	19	6.1%	533,629 €	31%	2.5%	27.89	89,762 €	25 €	51%	-8%	8%		15.58%			
Ciudad Autónoma de Ceuta	37,568 €	0.2%	1,626	0.4%	1	0.3%	37,568 €	100%	0.2%	61.50	37,568 €	23 €	47%	0%	0%		0.37%			0.37%
Ciudad Autónoma de Melilla	170,318 €	0.8%	1,422	0.3%	3	1.0%	96,674 €	57%	0.4%	210.97	56,773 €	120 €	242%	0%	0%	0.33%			0.33%	
Comunidad de Madrid	3,182,475 €	14.7%	44,022	10.1%	42	13.6%	386,738 €	12%	1.8%	95.41	75,773 €	72 €	146%	5%	5%	10.07%				
Comunidad Foral de Navarra	399,785 €	1.9%	5,078	1.2%	2	0.6%	366,308 €	92%	1.7%	39.39	199,893 €	79 €	159%	1%	1%	1.16%				
Comunidad Valenciana	2,827,564 €	13.1%	55,103	12.6%	35	11.3%	472,849 €	17%	2.2%	63.52	80,788 €	51 €	104%	0%	0%	12.60%				
Extremadura	383,191 €	1.8%	11,725	2.7%	18	5.8%	77,860 €	20%	0.4%	153.52	21,288 €	33 €	66%	-1%	1%		2.68%			
Galicia	2,027,082 €	9.4%	27,121	6.2%	24	7.8%	1,139,952 €	56%	5.3%	88.49	84,462 €	75 €	151%	3%	3%	6.20%				
Illes Balears	625,927 €	2.9%	9,520	2.2%	13	4.2%	222,825 €	36%	1.0%	136.55	48,148 €	66 €	133%	1%	1%	2.18%				
La Rioja	79,835 €	0.4%	3,546	0.8%	3	1.0%	38,101 €	48%	0.2%	84.60	26,612 €	23 €	46%	0%	0%		0.81%			0.81%
País Vasco	1,251,665 €	5.8%	18,362	4.2%	16	5.2%	429,038 €	34%	2.0%	87.14	78,229 €	68 €	138%	2%	2%	4.20%				
Principado de Asturias	488,791 €	2.3%	8,541	2.0%	6	1.9%	284,199 €	58%	1.3%	70.25	81,465 €	57 €	116%	0%	0%	1.95%				
Región de Murcia	444,315 €	2.1%	14,982	3.4%	11	3.6%	75,905 €	17%	0.4%	73.42	40,392 €	30 €	60%	-1%	1%		3.43%			
														0.00%	16.56%	56.71%	43.29%	0.33%	7.75%	0.00%

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 42 SPAIN - ERASMUS+ VET RME 2016





NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Region	RME 2016
Andalucía	133%
Aragón	52%
Canarias	97%
Cantabria	20%
Castilla y León	68%
Castilla-La Mancha	66%
Cataluña	55%
Ciudad Autónoma de Ceuta	20%
Ciudad Autónoma de Melilla	110%
Comunidad de Madrid	112%
Comunidad Foral de Navarra	168%
Comunidad Valenciana	76%
Extremadura	87%
Galicia	259%
Illes Balears	92%
La Rioja	103%
País Vasco	132%
Principado de Asturias	102%
Región de Murcia	32%

Source: Compiled by the author with the data referenced at the beginning of this section.

TABLE 40 SPAIN - ERASMUS+ VET REGIONAL DATA 2016

SPAIN 2016 Round 1	Budget	% from total budget	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects per 100 K Students	€/ Project	€/ Student	Regional Mobility Efficiency RME	Inequity	Inequity	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
Andalucía	4,022,715 €	24.0%	78766	18.0%	49	16.9%	439,864 €	11%	2.6%	62.21	82,096 €	51 €	133%	6%	6%	18.02%				
Aragón	242,203 €	1.4%	12175	2.8%	9	3.1%	108,853 €	45%	0.7%	73.92	26,911 €	20 €	52%	-1%	1%		2.78%			
Canarias	874,085 €	5.2%	23644	5.4%	25	8.6%	71,660 €	8%	0.4%	105.74	34,963 €	37 €	97%	0%	0%		5.41%			
Cantabria	50,944 €	0.3%	6563	1.5%	2	0.7%	41,380 €	81%	0.2%	30.47	25,472 €	8 €	20%	-1%	1%		1.50%			1.50%
Castilla y León	645,965 €	3.9%	24764	5.7%	7	2.4%	224,378 €	35%	1.3%	28.27	92,281 €	26 €	68%	-2%	2%		5.66%			
Castilla-La Mancha	562,338 €	3.4%	22133	5.1%	25	8.6%	89,073 €	16%	0.5%	112.95	22,494 €	25 €	66%	-2%	2%		5.06%			
Cataluña	1,444,205 €	8.6%	68113	15.6%	20	6.9%	468,551 €	32%	2.8%	29.36	72,210 €	21 €	55%	-7%	7%		15.58%			
Ciudad Autónoma de Ceuta	12,435 €	0.1%	1626	0.4%	1	0.3%	12,435 €	100%	0.1%	61.50	12,435 €	8 €	20%	0%	0%		0.37%			0.37%
Ciudad Autónoma de Melilla	59,843 €	0.4%	1422	0.3%	2	0.7%	44,923 €	75%	0.3%	140.65	29,922 €	42 €	110%	0%	0%	0.33%				
Comunidad de Madrid	1,892,630 €	11.3%	44022	10.1%	38	13.1%	243,950 €	13%	1.5%	86.32	49,806 €	43 €	112%	1%	1%	10.07%				
Comunidad Foral de Navarra	326,154 €	1.9%	5078	1.2%	2	0.7%	296,195 €	91%	1.8%	39.39	163,077 €	64 €	168%	1%	1%	1.16%				
Comunidad Valenciana	1,596,674 €	9.5%	55103	12.6%	32	11.0%	362,032 €	23%	2.2%	58.07	49,896 €	29 €	76%	-3%	3%		12.60%			
Extremadura	391,973 €	2.3%	11725	2.7%	14	4.8%	168,615 €	43%	1.0%	119.40	27,998 €	33 €	87%	0%	0%		2.68%			
Galicia	2,885,350 €	16.1%	27121	6.2%	21	7.2%	1,462,113 €	54%	8.7%	77.43	127,874 €	99 €	259%	10%	10%	6.20%			6.20%	
Illes Balears	336,804 €	2.0%	9520	2.2%	6	2.1%	194,616 €	58%	1.2%	63.03	56,134 €	35 €	92%	0%	0%		2.18%			
La Rioja	140,179 €	0.8%	3546	0.8%	3	1.0%	107,146 €	76%	0.6%	84.60	46,726 €	40 €	103%	0%	0%	0.81%				
País Vasco	925,903 €	5.5%	18362	4.2%	15	5.2%	299,562 €	32%	1.8%	81.69	61,727 €	50 €	132%	1%	1%	4.20%				
Principado de Asturias	334,233 €	2.0%	8541	2.0%	9	3.1%	127,822 €	38%	0.8%	105.37	37,137 €	39 €	102%	0%	0%	1.95%				
Región de Murcia	185,040 €	1.1%	14982	3.4%	10	3.4%	29,975 €	16%	0.2%	66.75	18,504 €	12 €	32%	-2%	2%		3.43%			3.43%
														0.00%	19.35%	42.74%	57.26%	6.20%	5.30%	0.00%

Source: Compiled by the author with the data referenced at the beginning of this section.

Regional Mobility Efficiency - RME

Comunidad de Madrid, Comunidad Foral de Navarra, Galicia, País Vasco and Principado de Asturias are the 5 regions (out of 19) where the students could, the whole period of three years, receive more funds than average (RME>100%) (see Table 41).

Significant is the case of Galicia with an average RMEs of 237%, bigger than 200%. This means the students in this region had access to a funding amount that doubled the national average (see Table 41).

Cantabria is the region with an, on average, RME lower than 50%., RME 10%. In this region students were always situated in a bad situation (RME<50%). The students in those regions could only access less than half the national average of funds. In 2014 there was no institution funded in Cantabria (see Table 41).

On average, 42.94 % of the students were located in regions with an RME greater than 100%. This means these VET students had access to more KA102 grants than the national average € /student. 4.63 % of the students studied in regions that received more than twice this average (RME >200%) (see Table 35).

On average, 57.06 % of the students were located in regions with an RME lower than 100%. This means these VET students had access to less KA102 grants than the national average € /student (see Table 35).

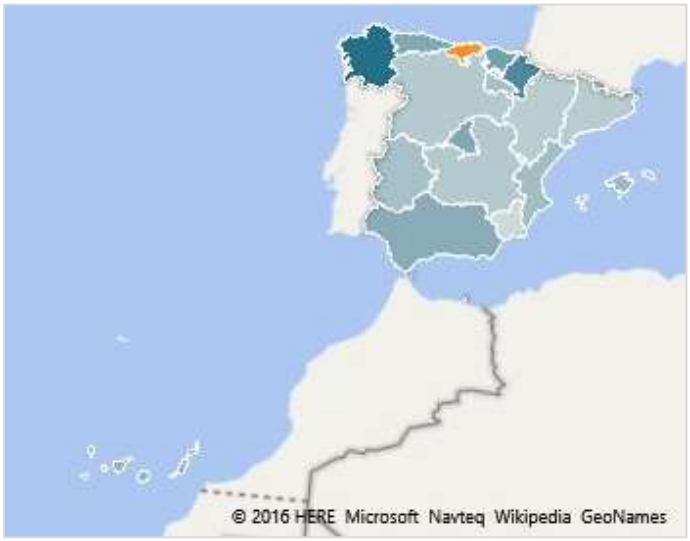
7.67% of the students studied in regions that received less than half of this average (RME <50%) (see Table 35).

TABLE 41 SPAIN - REGIONAL MOBILITY EFFICIENCY RME 2014/2016

Region	2014	2015	2016 R1	Average
Andalucía	89%	125%	133%	116%
Aragón	31%	89%	52%	57%
Canarias	116%	98%	97%	103%
Cantabria	**0%**	10%	20%	10%
Castilla y León	45%	72%	68%	61%
Castilla-La Mancha	79%	49%	66%	65%
Cataluña	70%	51%	55%	59%
Ciudad Autónoma de Ceuta	166%	47%	20%	77%
Ciudad Autónoma de Melilla	51%	242%	110%	134%
Comunidad de Madrid	117%	146%	112%	125%
Comunidad Foral de Navarra	234%	159%	168%	187%
Comunidad Valenciana	76%	104%	76%	85%
Extremadura	89%	66%	87%	81%
Galicia	302%	151%	259%	237%
Illes Balears	52%	133%	92%	92%
La Rioja	96%	46%	103%	82%
País Vasco	156%	138%	132%	142%
Principado de Asturias	155%	116%	102%	124%
Región de Murcia	60%	60%	32%	51%

Source: Compiled by the author with the data referenced at the beginning of this section.

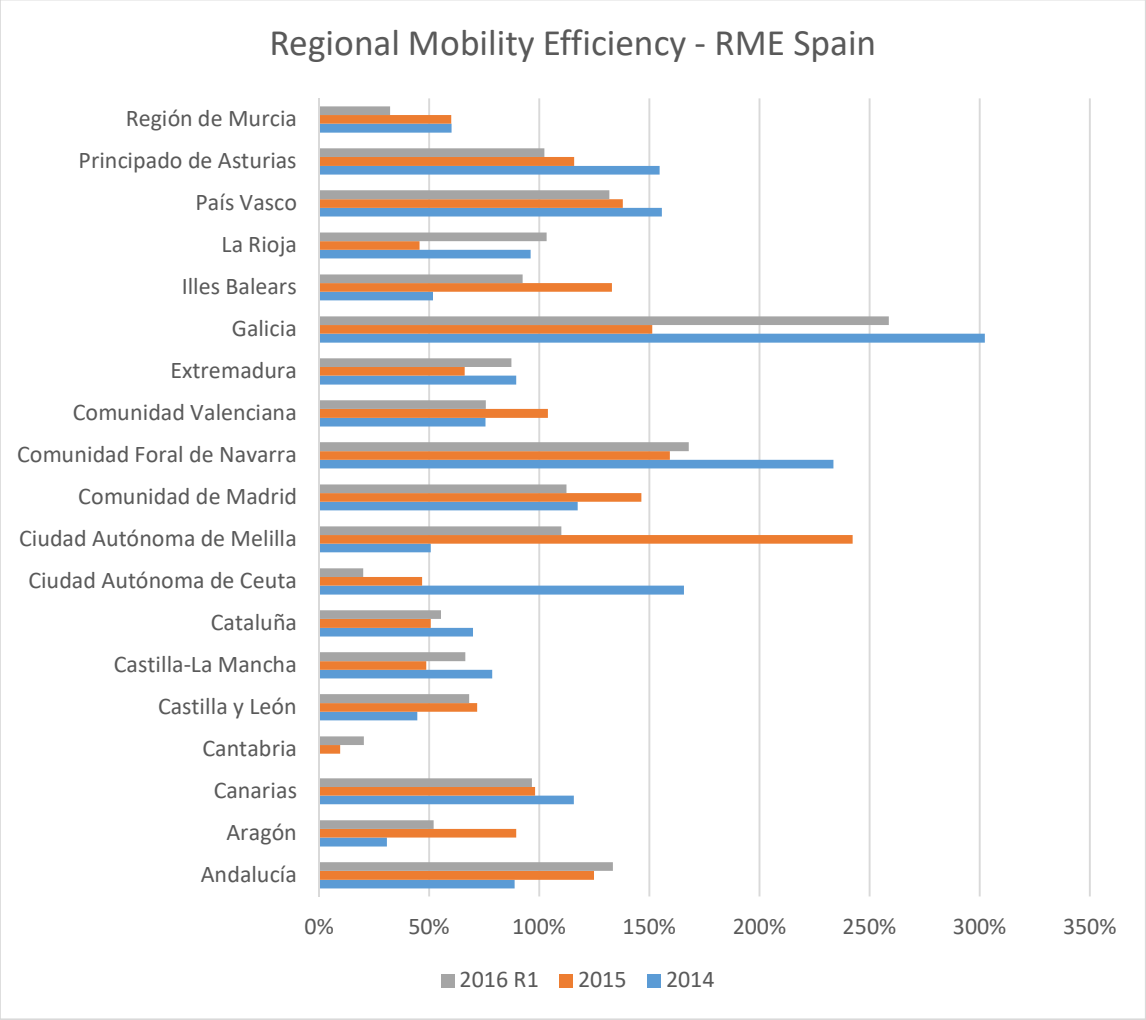
FIGURE 43 SPAIN - AVERAGE RME 2014/2016



NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Source: Compiled by the author with the data referenced at the beginning of this section

FIGURE 44 SPAIN - REGIONAL MOBILITY EFFICIENCY RME 2014/2016



Source: Compiled by the author with the data referenced at the beginning of this section.

6.5 United Kingdom

6.5.1 Indicators and benchmarks

A total of 1,390,146 upper secondary students studied in Vocational Education and Training programmes in the United Kingdom during the years previous to this project (UK GOVERNMENT, 2012 E), (UK GOVERNMENT, 2012 NI), (UK GOVERNMENT, 2014), (SCOTTISH GOVERNMENT, 2013). According to Eurostat, 43.8% of the students enrolled in upper secondary education during 2013 were attending vocational programmes.

Also according to Eurostat (General government expenditure by function -COFOG- database), the UK's general government expenditure on education as a proportion of GDP, which stood at 5.5% in 2013, is above the EU average (5%). However, this is the lowest rate the UK has witnessed since 2007 and represents a significant drop from 6.6% in 2010.

The Education and Training Monitor 2015 – United Kingdom (EUROPEAN COMMISSION, 2015 UK, p. 3) mentions:

> *In June 2015, the newly-elected government announced further budgetary cuts in the areas of pre-primary, further and higher education as part of a broader fiscal savings agenda. These savings are expected to come from departmental underspends, increased efficiencies and some small budgetary reductions and will affect both the Department for Education (savings of GBP 450 million) and the Department for Business, Innovation and Skills (again GBP 450 million).*

The vocational qualifications system in the UK is complex. Measures taken to simplify the framework have to be done taking into account the reduction of the education and training budget:

> *The previous government published a plan to reform adult vocational qualifications with a view to simplifying the qualifications regime and ensuring that qualifications are recognised by employers before being approved. Following the Wolf Report* (Wolf, 2011)*, Tech-levels were introduced from September 2014 as an equivalent*

to A-levels for those who want to take a vocational route. The new UK government has announced that it will legislate to set a target of creating three million apprenticeships by 2020, to ensure their quality and to raise their reputation as part of a career path.

Many further education colleges, previously offering a wide range of general and vocational courses for the over-16s, have to reinvent themselves in response to the cut in 16-19 skills funding and the increase in funding for apprenticeships. It was announced that the word 'apprenticeships' would be legally protected by the Enterprise Bill, similarly to the word 'degree', in a bid to enhance the status of apprenticeships. This is justified, as for now, the latest figures show that the number of apprenticeship starts has fallen. In 2013/14 there were 440 000 apprenticeship starts in England, which is 70 000 fewer than the number of starts in the 2012/13 academic year. This is a result of the fall in the number of apprenticeship starts among people over the age of 25 as a result of removing apprenticeships from the scope of the loans programme. This has so far deterred older people from enrolling. However, it has not yet encouraged a higher number of young people to enrol.

Most apprentices chose to study for the service sector, with three quarters of starts concentrated in three sectors: business, administration and law; health, public services and care; and retail and commercial enterprise. Encouragingly, the percentage of men and women in apprenticeships is roughly equal, with women only slightly ahead (52% of women compared to 48% of men). The level of qualification acquired through apprenticeships tends to be low, with the highest level of apprenticeships making up only 2% of total apprenticeship starts.

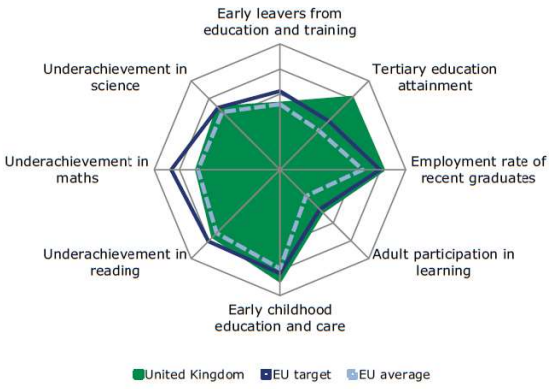
(EUROPEAN COMMISSION, 2015 UK, p. 10)

FIGURE 45 UNITED KINGDOM, KEY INDICATORS AND BENCHMARKS

		United Kingdom		EU average	
		2011	2014	2011	2014
Educational poverty and spending cuts: challenges for the education sector					
Share of 15 year-olds with underachievement in:	Reading •	:	16.6% [12]	:	17.8% [12]
	Maths •	:	21.8% [12]	:	22.1% [12]
	Science •	:	15.0% [12]	:	16.6% [12]
Education investment	Public expenditure on education as a percentage of GDP	6.0%	5.5% [13]	5.1%	5.0% [13]
	Public expenditure on education as a share of total public expenditure	12.9%	12.0% [13]	10.5%	10.3% [13]
Education attainment levels of young people across Europe					
Early leavers from education and training (age 18-24)	Men	16.1%	12.8%	15.2%	12.7%
	Women	13.8%	10.7%	11.5%	9.5%
	Total •	14.9%	11.8%	13.4%	11.1%
Tertiary education attainment (age 30-34)	Men	42.6%	44.2%	31.0%	33.6%
	Women	48.3%	51.1%	38.7%	42.3%
	Total •	45.5%	47.7%	34.8%	37.9%
Policy levers for inclusiveness, quality and relevance					
Early childhood education and care (participation from age 4 to starting age of compulsory education) •		95.8%	96.1% [13]	93.2%	93.9% [13]
Teachers' participation in training	Any topic (total)	:	91.7% [13, ENG]	:	84.6% [13]
	Special needs education	:	38.3% [13, ENG]	:	32.4% [13]
	Multicultural settings	:	12.9% [13, ENG]	:	13.2% [13]
	ICT skills for teaching	:	38.9% [13, ENG]	:	51.0% [13]
Foreign language learning	Share of ISCED 2 students learning two or more foreign languages	:	: [12]	63.0%	: [12]
Share of ISCED 3 students in vocational education and training (VET)		36.0%	43.8% [13]	50.4%	48.9% [13]
Employment rate of recent graduates by education attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4	75.7%	78.5%	71.3%	70.8%
	ISCED 5-8	85.4%	86.2%	82.5%	80.5%
	ISCED 3-8 (total) •	81.0%	83.2%	77.1%	76.1%
Learning mobility	Inbound graduates mobility (bachelor)	:	15.7% [13]	:	: [13]
	Inbound graduates mobility (master)	:	46.1% [13]	:	: [13]
Adult participation in lifelong learning (age 25-64)	ISCED 0-8 (total) •	15.7%	15.8%	8.9%	10.7%

Sources: Eurostat (LFS, UOE, GFS); OECD (PISA, TALIS). Notes: • ET 2020 benchmark; data refer to weighted EU average, covering a different number of Member States depending on the source; b= break in time series, d= definition differs, p= provisional, u= low reliability, [12]= 2012, [13]= 2013, ENG= England. Further information is found in the respective section of Volume 1 (ec.europa.eu/education/monitor).

Figure 1. Position in relation to highest (outer ring) and lowest performers (centre)



Source: DG Education and Culture calculations, based on data from Eurostat (LFS 2014 and UOE 2013) and OECD (PISA 2012, TALIS 2013). *Note:* all scores are set between a maximum (the highest performers visualised by the outer ring) and a minimum (the lowest performers visualised by the centre of the figure).

Source: (EUROPEAN COMMISSION, 2015 UK, p. 2).

6.5.2 VET Studies and certificates

The devolution of governance in the United Kingdom means that the administration in England, Scotland, Northern Ireland and Wales is distributed among a variety of institutions, each with its own great autonomy. The following are the guidelines set to structure education and training in the UK:

> *(a) overall policy for education, vocational learning and skills is the responsibility of the learning or education department of each national government. Universities are independent institutions with their own charter;*
>
> *(b) the funding, provision and management of learning opportunities in each nation is delegated to a funding council, which determines priorities and the allocation of funding and oversees data collection;*
>
> *(c) regional and local bodies advise on the provision of learning opportunities to meet local needs, within the overall national policy and funding arrangements, but individual colleges have considerable autonomy;*
>
> *(d) inspection of the quality of provision is the responsibility of an independent body in each nation, as is research, evaluation of initiatives and staff development;*
>
> *(e) approval of qualifications for use in publicly funded provision is the responsibility of an accrediting body for each nation, although those for England, Wales and Northern Ireland work closely on accreditation issues;*
>
> *(f) employment policy and training programmes for the unemployed are the responsibility of the UK Department for Work and Pensions (DWP), working with the governments of the devolved administrations;*
>
> *(g) sector skills councils (SSCs), responsible for identifying skills needs in economic sectors and for defining the occupational standards on which occupational qualifications are based, work across the UK, as does their coordinating body, the Sector Skills Development Agency (SSDA)* (Cuddy & Leney, 2005, p. 19).

Vocational education in the UK is undergoing a transformation process that is still underway as mentioned in The Wolf Report, 2011.

> *As anyone within 14-19 education is all too aware, vocational education in England has been subject to rapid and repeated change over both the last*

> *quarter century, and the last few years; and its current condition can only be understood in relation to these. Examples include:*
>
> *- a whole succession of new 'non-academic' qualifications for young people designed by central government, with the Diploma merely the most recent*
>
> *- increasing regulation of school and college-based qualifications for the 14-19 age group, academic and vocational alike*
>
> *- complete redesign of all vocational qualifications with a specific occupational focus. Many of these are taken by both young people and adults*
>
> *- successive changes in the performance management regime used by central government, including the construction of accountability measures*
>
> *- apprenticeship reform, with a statutory base and with delivery mechanisms which are distinctive and specific to this country*
>
> *- constant changes in the funding formulae used for post-16 provision*
>
> (Wolf, 2011)

In the United Kingdom, all the publicly funded schools must provide the national curriculum. This national curriculum contains obligatory topics like, mathematics, English, science, ... that are present during all the compulsory studies (ages from 5 to 16, 4 to 16 in Northern Ireland). In 2002, vocational specialisation options were introduced for students in the ages between 14 and 16 years old. At the age of 16 the students attend public examinations, the general certificate of secondary education (GCSE) (level 2) in England, Wales and Northern Ireland (see Figure 54) and the Standard Grade in Scotland. In 2000, the vocational GCSEs and vocational A-levels were introduced (Cuddy & Leney, 2005, p. 23).

After the compulsory education, the youngsters have the following options:

- *To continue school*
- *To attend a sixth-form or a further education college*
- *Get employed as an apprentice*
- *Search an employment*

16 to 19 years old students attending a school or college can choose between academic, vocational or a mixture of both types of subjects. After two years of upper secondary education, these students usually qualify for the general certificate of education (GCE AS and A-levels) (level 3) (Cuddy & Leney, 2005, p. 23). Upper secondary education is mainly qualification oriented and is offered by sixth-form, tertiary and further education colleges. There is no statutory curriculum at post-16 level and admission and transfer arrangements are made at the discretion of the admitting institution. Further education colleges offer youngsters and adults in England, Wales and Northern Ireland iVET and cVET A-levels, vocational and degree courses (Cuddy & Leney, 2005, p. 26).

The new Welsh Baccalaureate launched in 2015 is based on a Skills Challenge Certificate, which will be graded, and Supporting Qualifications (may include vocational experiences). The main objective is to allow students to develop and demonstrate an understanding of and proficiency in essential and employability skills: Communication, Numeracy, Digital Literacy, Planning and Organisation, Creativity and Innovation, Critical Thinking and Problem Solving, and Personal Effectiveness (WJEC, 2015).

Higher education in the UK does not distinguish between vocational and academic studies. Universities and other higher education institutions offer Bachelor, Master and Doctoral degrees and also offer iVET focused courses, like the two-year higher national certificates and diplomas (HNCs and HNDs) and foundation degrees (FD) (Cuddy & Leney, 2005, p. 26).

England, Wales and Northern Ireland

Available vocational qualifications in England, Wales and Northern Ireland are mainly BTECs and NVQs. These qualifications are present at secondary as well as at higher education level:

BTEC introductory, first and national qualifications

Business and technical education councils (BTECs) are studies that offer a mixture of theoretical and practical work at levels 1, 2 and 3. After these studies, the students can start work or choose to continue studying courses like the BTEC higher national diploma/certificate, foundation or other degrees at level 4 or professional qualifications (Cuddy & Leney, 2005, p. 29).

> *BTEC is a work-related qualification, available in a wide range of subjects. The qualification offers a mix of theory and practical work, and can also include an element of work experience.*
>
> *BTEC Introductory ~ This qualification is available at Level 1 and offers an entry into the industry sector and encourages the development of personal and work-related skills. The BTEC Introductory qualifications are suitable for any student aged 14 plus.*
>
> *BTEC Firsts ~ Available at Level 2, there are currently over 60 BTEC First qualifications available, linked to industry sectors. The BTEC First is suitable for students aged pre-16, and can be taken alongside core GCSE subjects such as English, Maths and Science.*
>
> *BTEC Level 2 Diplomas ~ These are full-time, one year courses which are equivalent to four GCSEs at grade C or above. The Level 2 Diploma can be taken in a variety of subjects and is often taken alongside one or two GCSE's. Successful completion of this course will enable* [the student] *to go on to a level 3 course. The qualification is assessed by 100% coursework.*
>
> *BTEC Nationals ~ Available at Level 3, there are more than 250 qualifications for students to choose from. These qualifications are suitable for students aged 16 plus and come in three sizes - awards, certificates and diplomas. BTEC National Diplomas can gain* [the student] *UCAS points for getting into university.*
>
> *BTEC Level 3 Diplomas ~ This qualification offers an engaging programme in one work-related subject area for students who are clear about which vocational area they want to pursue. These are two year courses which are equivalent to two A*

> *Levels. The course is made up of twelve units over the two years and is assessed by 100% coursework. The Extended Diploma has eighteen units and is equivalent to three A Levels.*
>
> (CAREERS ADVICE FOR PARENTS, 2016)

BTEC Higher Nationals

Offered at Universities and Further Education colleges

National vocational qualifications (NVQs)

NVQs are work-based qualifications that are frequently taught at further education colleges. Studies are offered at levels 1, 2 and 3 (see Figure 54) and permit access to further education and training and to the labour market (Cuddy & Leney, 2005, p. 29).

NVQs are based on the National Occupational Standards (NOS), statements of the standards of performance individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding. NOS are developed for employees by employers through the relevant Sector Skills Council or Standards Setting Organisation (NOS, 2016).

HNC/HND Higher National Certificate and Diploma qualifications

HNCs (Higher National Certificates) and HNDs (Higher National Diplomas) are vocational higher education qualifications. HNCs can take one year to complete full time and two years part time (or through distance learning). HNDs take two years full time and can also be taken part time, which means it will take longer to complete. HNCs and HNDs are mainly assessed through projects and practical assignments that the student completes throughout the course. HNCs can allow entry into the second year of a degree, while HNDs can allow entry into the second or third year (STUDENTIAL, 2016).

FD, Foundation degrees

Foundation Degrees are vocational courses designed and delivered together with employers that focus on the relevant knowledge and skills required for business.

They are offered by universities in partnership with Higher Education colleges and Further Education colleges.

These courses are interesting for people who are already in work, those who would like to make a career change and those who have recently completed level 3 qualifications like A levels, Advanced Apprenticeships or NVQ3 (STUDENTIAL, 2016).

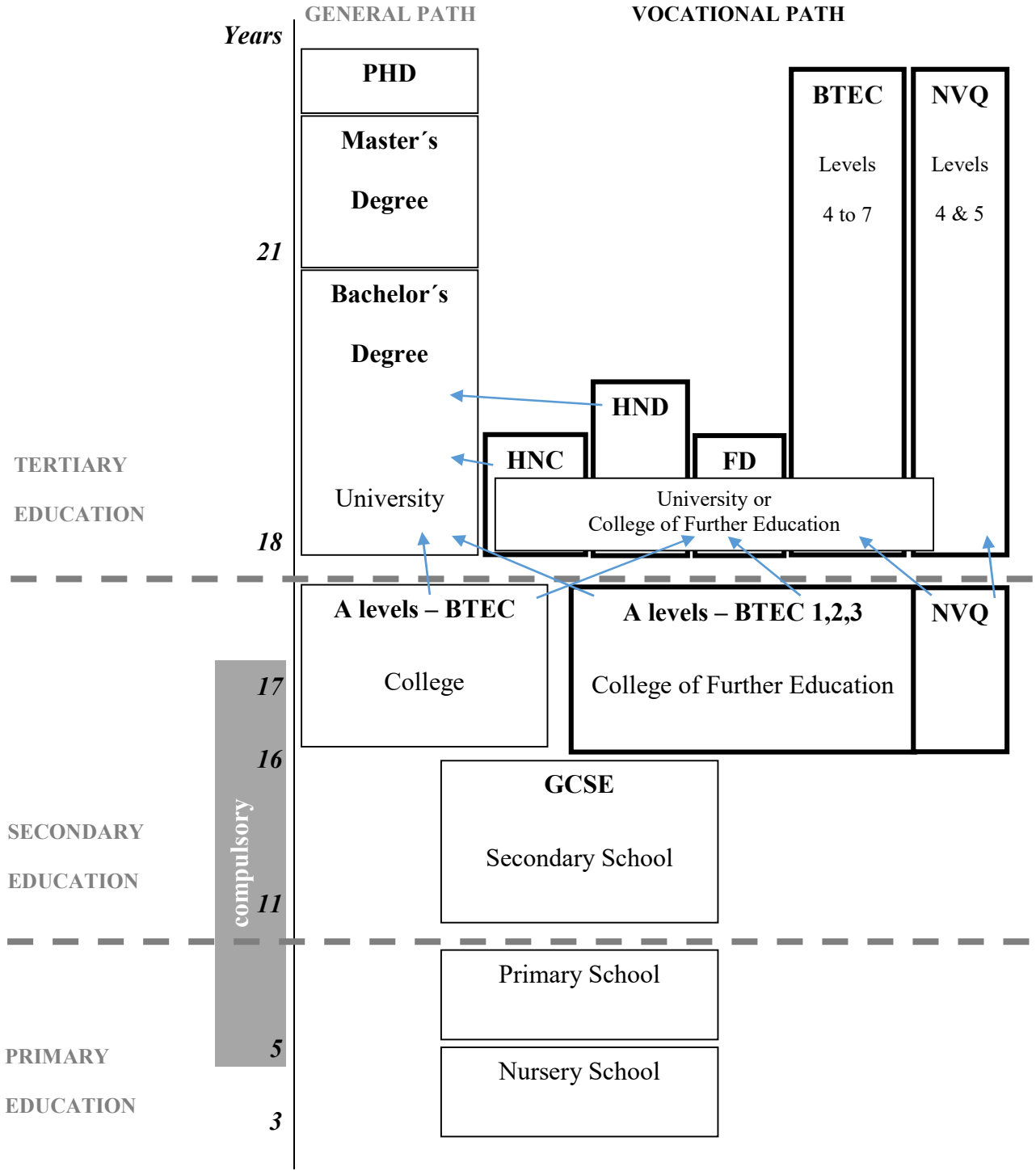
City and Guilds: IVQs

City and Guilds is a training institution that apart from NVQs and BTECs also offers, among others, international vocational qualifications (IVQs). The IVQs are available at three levels; certificate, diploma and advanced diploma.

OCR national awards, certificates and diplomas

Oxford, Cambridge and Royal Society of Arts (OCR) nationals are a set of qualifications designed mainly for 16 to 19 year olds, available at levels 1, 2 and 3. Students can work or continue training as in the case of the BTEC studies (Cuddy & Leney, 2005, p. 29).

FIGURE 46 VET IN ENGLAND, WALES AND NORTHERN IRELAND



Source: Created by the autor.

Scotland

The Scottish credit and qualifications framework is based on a collection of academic and vocational courses and qualifications dealing with topics for students of all ages in schools and colleges.

Higher and Advanced Higher may grant access to higher education or an employment (Cuddy & Leney, 2005, p. 26).

Scottish vocational awards as mentioned in (SQA, 2016):

National Certificates

National Certificates are designed to provide learners with the skills and knowledge (including Core Skills and other transferable skills) that employers expect. They also provide progression opportunities to higher level programmes of study (for example Higher National Certificates at SCQF level 7). They are delivered within the broad context of a subject/occupational area.

National Progression Awards (NPAs)

National Progression Awards (NPAs) are small flexible group awards that cover a defined set of skills/knowledge in a vocational area. They are designed for candidates in work or those preparing to enter or return to work.

Professional Development Awards (PDAs)

Professional Development Awards (PDAs) are designed for those already in a career or vocation who wish to extend or broaden their higher level skills base, often after completing a degree or vocational qualification relevant to their area of interest

Technical Apprenticeships

Technical Apprenticeships offer those aged over 16 paid employment combined with the opportunity to train for jobs at management level (SCQF level 8 and above) . They offer businesses flexible, work-based training, as a tool for developing and up-skilling staff to meet their specific business requirements.

Modern Apprenticeships

Modern Apprenticeships offer anyone aged over 16 paid employment combined with the opportunity to train for jobs across a wide range of sectors.

Modern Apprenticeships are supported by the Confederation of Business and Industry, the Trade Union Congress and a wide range of employers. All the Modern Apprenticeship frameworks are developed by the appropriate sector skills council in consultation with their industry. Modern Apprenticeship frameworks can also be used

as the basis for training more established employees. Off the job learning usually takes place through colleges or training providers.

Scottish Vocational Qualifications (SVQs)

SVQs are work-based qualifications which are usually delivered in the workplace or in partnership with a college or other training provider. There are SVQs for nearly all occupations in Scotland and they are available SVQ Levels 1 - 5. SVQs are currently notionally placed in the SCQF as the individual SVQs may be at differing SCQF levels and have differing amounts of credit points, depending on the structure and context of the SVQ. SVQs are a means of recognising the skills and knowledge people need in employment, i.e. job competence. Successful completion of an SVQ provides clear evidence that the learner works to nationally recognised occupational standards.

Other Scottish awards are:

Advanced Higher

This qualification was introduced as part of the "Higher Still" reform. It is at SCQF level 7 and is awarded on the Scottish Qualifications Certificate by the Scottish Qualifications Authority (SQA). New Advanced Highers will be awarded from 2016 as part of Curriculum for Excellence.

Higher

The Higher has been awarded for over 100 years. During that time, it has undergone a number of reforms. It has always had the purpose of providing qualifications for progression to Higher Education or employment. SCQF level 6 is the standard level for progression to HE. From 1963 to 1982 it was awarded on the Scottish Certificate of Education (SCE) by the Scottish Certificate of Education Examination Board (SCEEB), which later became the Scottish Examination Board (SEB). Since 2000, it has been awarded on the Scottish Qualifications Certificate (SQC) by the Scottish Qualifications Authority (SQA). New Highers will be awarded from 2015 as part of Curriculum for Excellence. (www.sqa.org.uk/cfe)

Access 1, 2 & 3

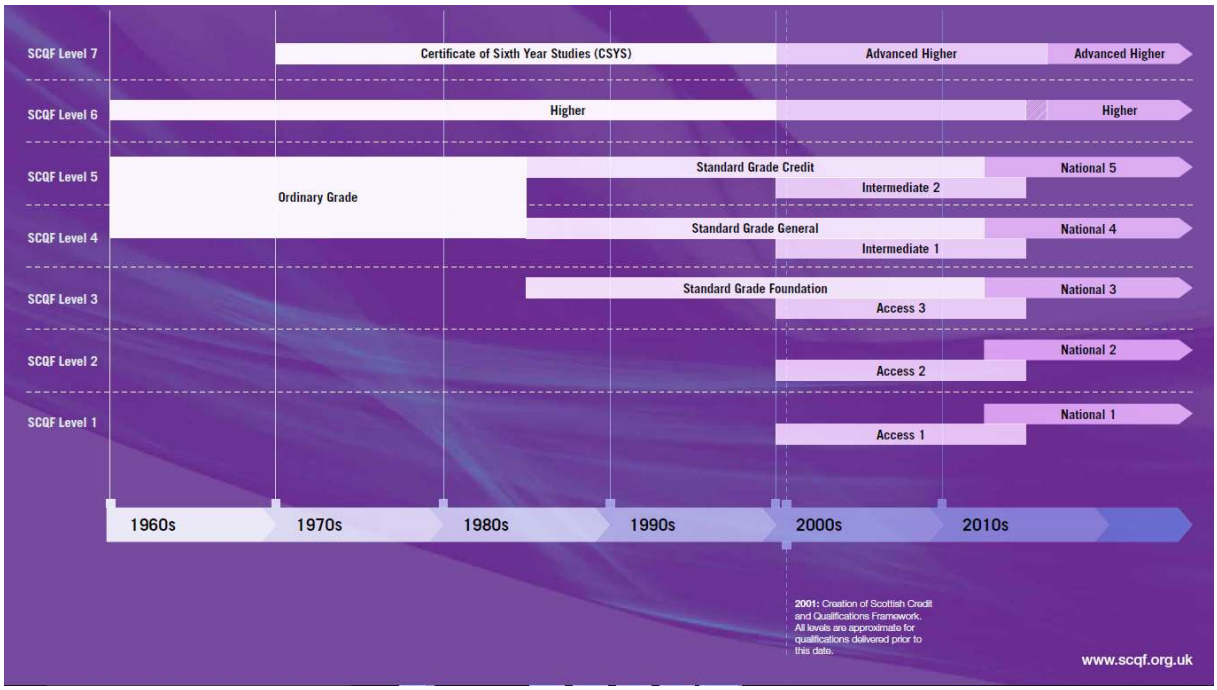
These qualifications were introduced as part of the "Higher Still" reforms. Access qualifications are at SCQF levels 1, 2 and 3. They are awarded on the Scottish Qualifications Certificate (SQC) by the Scottish Qualifications Authority (SQA). They are being replaced by new National Qualifications at SCQF levels 1, 2 and 3.

National 1, 2, 3, 4 & 5

New National Qualifications are being introduced as part of Curriculum for Excellence. All will be awarded on the Scottish Qualifications Certificate (SQC) by the Scottish Qualifications Authority (SQA) from 2014.

(SCQF, 2015).

FIGURE 47 SCOTTISH NATIONAL QUALIFICATIONS



Source: SCOTTISH NATIONAL QUALIFICATIONS - SCQF LEVELS AND TIMELINES (SCQF, 2015).

FIGURE 48 THE SCOTTISH CREDIT AND QUALIFICATIONS FRAMEWORK

SCQF Levels	SQA Qualifications			Qualifications of Higher Education Institutions	SVQs/MAs
12				Doctoral Degree	Professional Apprenticeship
11				Masters Degree, Integrated Masters Degree, Post Graduate Diploma, Post Graduate Certificate	Professional Apprenticeship SVQ 5
10				Honours Degree, Graduate Diploma, Graduate Certificate	Professional Apprenticeship
9			Professional Development Award	Bachelors / Ordinary Degree, Graduate Diploma, Graduate Certificate	Technical Apprenticeship SVQ 4
8		Higher National Diploma		Diploma Of Higher Education	Technical Apprenticeship SVQ 4
7	Advanced Higher, Awards, Scottish Baccalaureate	Higher National Certificate		Certificate Of Higher Education	Modern Apprenticeship SVQ 3
6	Higher, Awards, Skills for Work Higher				Modern Apprenticeship SVQ 3
5	National 5, Awards, Skills for Work National 5				Modern Apprenticeship SVQ 2
4	National 4, Awards, Skills for Work National 4	National Certificate	National Progression Award		SVQ 1
3	National 3, Awards, Skills for Work National 3				
2	National 2, Awards				
1	National 1, Awards				

Source: (SCQF, 2015 B).

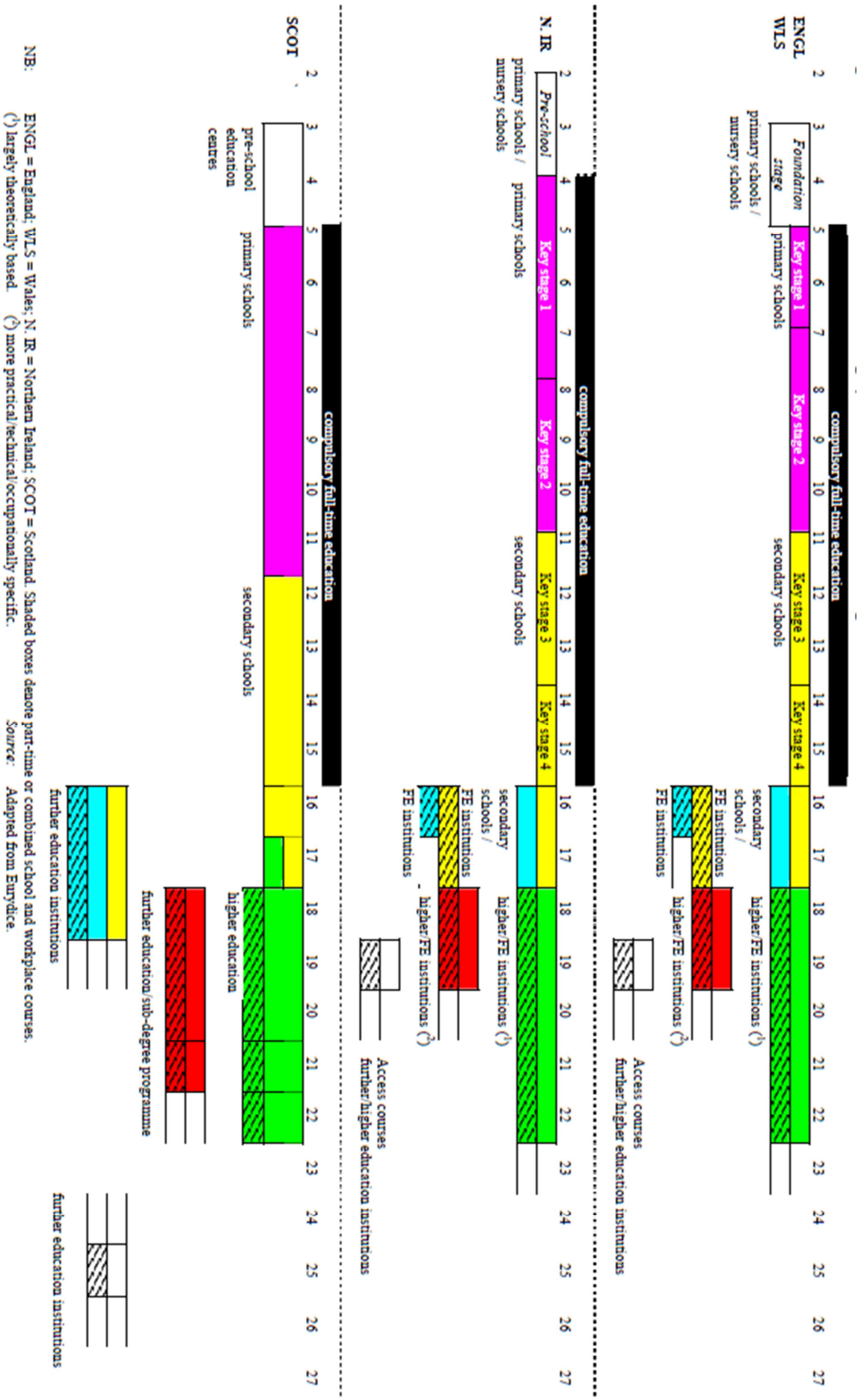
Apprenticeship in the UK

In the UK, an apprenticeship is a combination of work-based training and education that lasts at least 12 months and includes the following elements (Cuddy & Leney, 2005, p. 31):

- *a national vocational qualification (NVQ/SVQ), delivered and assessed mainly in the workplace;*
- *key skills, like communication, application of number and ICT at a suitable level;*
- *a technical certificate, assessing the knowledge of the technical or business areas associated with the job and offered at a Further Education college.*
- *Depending on the results achieved, apprentices can access higher education.*

Students in Scotland combine the work-based training with studying a SVQ level 3 (SCQF level 6) or above and core skills at a minimum level of intermediate 1 (SCQF level 4). (Cuddy & Leney, 2005, p. 32).

FIGURE 49 EDUCATION AND TRAINING SYSTEMS IN THE UNITED KINGDOM



Source: (Cuddy & Leney, 2005, p. 24).

6.5.3 National Qualifications Framework

Cedefop's fourth annual report on developments in national qualification frameworks (NQFs) in Europe (CEDEFOP, 2012 NQF, pp. 226-239) describes the situation of five different qualifications framework that can be found in the United Kingdom:

- *England and Northern Ireland:*
  - *The framework for higher education qualifications (FHEQ) established in 2001*
  - *The qualifications and credit framework (QCF) established during the period 2006-08*
  - *The NQF established in 2003*
- *Scotland:*
  - *The Scottish qualifications framework (SCQF) has operated since 2001*
- *Wales:*
  - *The credit and qualifications framework of Wales (CQFW) has also been in place since 2001.*

This variety of frameworks can be partly explained by the devolution of powers to the UK nations, specifically in the cases of Scotland and Wales. The multitude of frameworks also reflect the needs and interests of the different stakeholders in education and training, defending the existence of a separate framework for higher education qualifications in England and Northern-Ireland and maintaining the co-existence of the QCF and NQF.

Scotland and Wales have used their autonomy to develop unique frameworks covering all levels and types of qualifications.

England and Northern Ireland

Several national qualifications framework cover the different levels and types of qualifications in England and Northern Ireland.

The QCF mainly addressed vocational and pre-vocational education and training areas but did not include secondary education (school leaving certificates) and higher education. The QCF was referenced to the EQF in 2009 and the FHEQ, higher education, to the EHEA-framework in 2008. There was no official relation between these two frameworks but links can be established by comparison (CEDEFOP, 2012 NQF, pp. 226-239).

QCF replaced in 2003 the previous NVQ framework in England, Northern-Ireland and Wales. This framework introduced an 'eight plus one' methodology, combining eight regular qualifications levels with an entry level for basic skills, taking into account both work and school based awards. The previous NVQ was mainly focused only on work-based certifications. The idea was that the QCF should cover all publicly-funded qualifications, including general and vocational education but not degree-awarding institutions (higher education). The QCF covered the same number of levels as the NQF (number of levels, coverage) but differs in using '... units rather than qualifications (...) as the primary currency, and all units would carry a credit rating based (as in higher education) on one credit equalling 10 notional hours of learning' (Lester, 2011, p. 207).

The qualifications regulator for all external qualifications in England is the Office of the Qualifications and Examinations Regulator. In Northern Ireland, the qualifications regulator is the Council for Curriculum, Examinations and Assessment, which regulates external qualifications other than NVQs (CEDEFOP, 2012 NQF, pp. 226-239).

TABLE 42 REGULATED QUALIFICATIONS FRAMEWORK RQF IN ENGLAND, WALES AND NORTHERN IRELAND

Level	RQF examples	FHEQ examples
Entry	- Entry level certificate - Entry level Skills for Life - Entry level award, certificate and diploma - Entry level Functional Skills - Entry level Foundation Learning	
1	- GCSE (grades D-G) - Key Skills level 1 - NVQ level 1 - Skills for Life level 1 - Foundation diploma - BTEC award, certificate and diploma level 1 - Foundation Learning level 1 - Functional Skills level 1 - OCR National	
2	- GCSE (grades A*-C) - Key Skills level 2 - NVQ level 2 - Skills for Life level 2 - Higher diploma - BTEC award, certificate and diploma level 2 - Functional Skills level 2	
3	- AS and A level - Advanced Extension Award - Cambridge International award - International Baccalaureate - Key Skills level 3 - NVQ level 3 - Advanced diploma - Progression diploma - BTEC award, certificate and diploma level 3 - BTEC National - OCR National - Cambridge National	
4	- Certificate of higher education - Key Skills level 4 - NVQ level 4 - BTEC Professional award, certificate and diploma level 4	- Certificate of higher education - HNC

5	- HND - NVQ level 4 - Higher diploma - BTEC Professional award, certificate and diploma level 5 - HNC - HND	- Diploma of higher education - Diploma of further education - Foundation degree - HND
6	- NVQ level 4 - BTEC Advanced Professional award, certificate and diploma level 6	- Bachelor's degree - Graduate certificate - Graduate diploma
7	- BTEC Advanced Professional award, certificate and diploma level 7 - Fellowship and fellowship diploma - Postgraduate certificate - Postgraduate diploma - NVQ level 5 - BTEC Advanced Professional award, certificate and diploma level 7	- Master's degree - Postgraduate certificate - Postgraduate diploma
8	- NVQs level 5 - Vocational qualifications level 8	- Doctorate

Source: (UK GOVERNMENT, 2015).

TABLE 43 ENGLAND AND NORTHERN IRELAND - LEVEL CORRESPONDENCE ESTABLISHED BETWEEN THE QUALIFICATIONS AND CREDIT FRAMEWORK (QCF) AND THE EQF

	Entry level										
QCF	1	2	3	1	2	3	4	5	6	7	8
EQF			1	2	3	4	5		6	7	8

Source: (CEDEFOP, 2012 NQF, pp. 226-239).

In October 2015, in an aim to simplify the system, the Regulated Qualifications Framework (RQF) replaced the Qualifications and Credit Framework, and the National Qualifications Framework. RQF has also eight levels and three 'entry' levels and focuses the validation of qualifications on the Qualification Level and Size. Qualification Level indicates the difficulty and complexity of the knowledge and skills assigned to a specific qualification. Although most qualifications will be assigned a single level some, such as GCSEs, can span more than one. Qualification Size refers to the estimated total amount of time it could typically take to study and be assessed for a qualification and is expressed in terms of Total Qualification Time. The Guided Learning Hours are the part of that time typically spent being taught or supervised, rather than studying alone (OFQUAL, 2015).

Wales

The Credit Qualifications Framework - CQFW is a credit-based combination of other Welsh frameworks that includes academic and vocational qualifications: The framework for Higher Education – FHEQ, the NQF that regulates national courses and the quality assured lifelong learning.

In this framework one credit is defined as 10 hours of learning. It has 9 levels, the lowest of them subdivided into three. The Welsh framework is one of the few European frameworks that offers validation and/or recognition of prior learning as it assumes that all learning wherever and whenever it takes place should be valued and recognised.

The CQFW was referenced to the EQF as a part of the overall UK referencing process in February 2010 (CEDEFOP, 2012 NQF, pp. 226-239).

FIGURE 50 WALES - LEVEL OF CORRESPONDENCE ESTABLISHED BETWEEN THE CQFW AND THE EQF

	Entry level										
CQFW	1	2	3	1	2	3	4	5	6	7	8
EQF			1	2	3	4	5		6	7	8

Source: (CEDEFOP, 2012 NQF, pp. 226-239).

In December 2015, the Credit Qualifications Framework - CQFW adopted the level descriptors proposed in the Regulated Qualifications Framework - RQF (WELSH GOVERNMENT, 2015).

Scotland

In 2001, the Scottish credit and qualifications framework SCQF brought together three previously developed frameworks: the qualifications of higher education institutions, Scottish vocational qualifications, and the national and higher national qualifications.

The Scottish Credit and Qualifications Framework Partnership is a company limited by guarantee and also a Scottish charity that maintains the SQCF. The partnership is formed by the Scottish Qualifications Authority, Universities Scotland, Quality Assurance Agency, Association of Scotland's Colleges, and Scottish Ministers.

The SCQF has 12 levels, from access at SCQF level 1, up to Doctorate at level 12 (see Figure 48). The three first levels are specially important for individuals with particular learning needs. Learning is described in terms of learning outcomes.

The SCQF was referenced to the EQF in February 2010 as a part of the overall UK referencing process (CEDEFOP, 2012 NQF, pp. 226-239).

FIGURE 51 LEVEL OF CORRESPONDENCE ESTABLISHED BETWEEN THE SCOTTISH QUALIFICATIONS FRAMEWORK (SCQF) AND THE EQF

SCQF	1	2	3	4	5	6	7	8	9	10	11	12
EQF			1	2	3	4	5		6		7	8

Source: (CEDEFOP, 2012 NQF, pp. 226-239).

United Kingdom correspondence

The qualifications frameworks are managed in the UK by the Quality Assurance Agency for Higher Education (QAA), the Office of the Qualifications and Examinations Regulator (OFQUAL), Higher Education Funding Council for Wales (HEFCW) and the Credit & Qualifications Framework for Wales (CQFW Welsh Government), the Scottish Credit and Qualifications Framework Partnership, CCEA Accreditation.

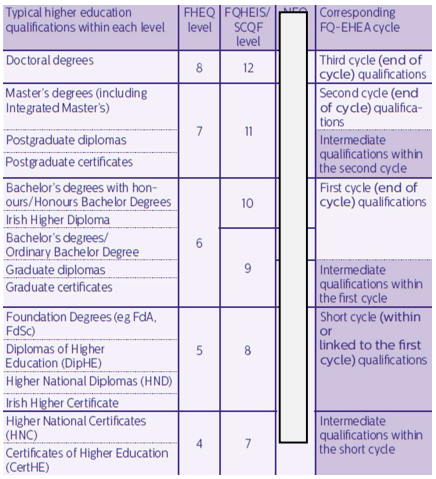
The following figures describe the overall situation in the UK as mentioned in (QAA, et al., 2014). These figures have to be confronted with Table 42 to take into account the adoption of the Regulated Qualifications Framework – RQF at the end of 2015.

FIGURE 52 UK-CORRESPONDENCE BETWEEN NQFS AND THE EQF

European Qualifications Framework (EQF)	Qualifications and Credit Framework England/ Northern Ireland (QCF)	Credit and Qualifications Framework for Wales (CQFW)	Scottish Credit and Qualifications Framework (SCQF)
8	8	8	12
7	7	7	11
6	6	6	10/9
5	5/4	5/4	8/7
4	3	3	6
3	2	2	5
2	1	1	4
1	E3	E3	3
	E2	E2	2
	E1	E1	1

Source: (QAA, et al., 2014, p. 1).

FIGURE 53 UK-OUTCOME OF VERIFYING THE COMPATIBILITY OF HE FRAMEWORKS



Source: (QAA, et al., 2014, p. 1).

FIGURE 54 QUALIFICATIONS FRAMEWORK – A ROUGH GUIDE TO UK QUALIFICATIONS

Main stages of education/ employment	England, Wales & Northern Ireland national qualifications framework (1)	The Scottish credit and qualifications framework (2)	England, Wales and Northern Ireland framework for higher education qualifications: FHEQ (3)
Qualifications can be taken at any age to continue or return to education or training			
Secondary education Initial entry into employment or further education	Entry level Entry Level Certificate (NQF)	Access level 1 Access level 2 Access level 3 Foundation Standard Grade	
Continuation of secondary education	Level 1 NVQ Level 1, Level 1 Certificate, GCSEs at grade D-G	Level 4 Intermediate 1, General Standard Grade, SVQ 1	
Progression to skilled employment	Level 2 NVQ Level 2, Level 2 Certificate, Level 2 Diploma, GCSEs at grade A*-C (1)	Level 5 Intermediate 2, Credit Standard Grade, SVQ 2	
Completion of secondary education	Level 3 NVQ Level 3, A-levels, Level 3 Certificate, Level 3 Diploma (2)	Level 6 Higher, SVQ 3 (4) Level 7	
Entry to higher education	Level 4 NVQs, Level 4 Certificate, Level 4 Diploma	Advanced Higher, Higher National Certificate, Certificate of Higher Education (5)	Level C Certificates of Higher Education
Qualified / Skilled worker	Level 5 NVQs, Level 5 Certificate, Level 5 Diploma, Higher National Diploma	Level 8 Higher National Diploma, Diploma in Higher Education, SVQ 4	Level I Ordinary Bachelor's degree, Foundation degrees, Diplomas of higher education and other higher diplomas
Specialised education and training		Level 9 Ordinary Degree, Graduate Diploma/Certificate	
Entry to professional graduate employment	Level 6 NVQs, Level 6 Certificate, Level 6 Diploma	Level 10 Honours degree, Graduate Diploma/Certificate	Level H Bachelor's degrees with honours, Graduate certificates and diplomas
Intermediate/ higher education Advanced skills training	Level 7 NVQs, Level 7 Diploma, Level 7 Fellowship, Level 7 Advanced Professional Certificate	Level 11 Masters, SVQ 5	Level M Master's degree, Post-graduate certificates and diplomas
Professional or post-graduate education or employment	Level 8 Highly specialist Diploma from a professional body	Level 12 Doctorates	Level D Doctoral degree

NB: This diagram illustrates the different frameworks of the different countries; it should not be used for direct comparisons of levels between countries. [..]

(1) www.qca.org.uk/qualifications; www.accac.org.uk; www.qca.org.uk/openquals; www.ccea.org.uk.

(2) www.scqf.org.uk.

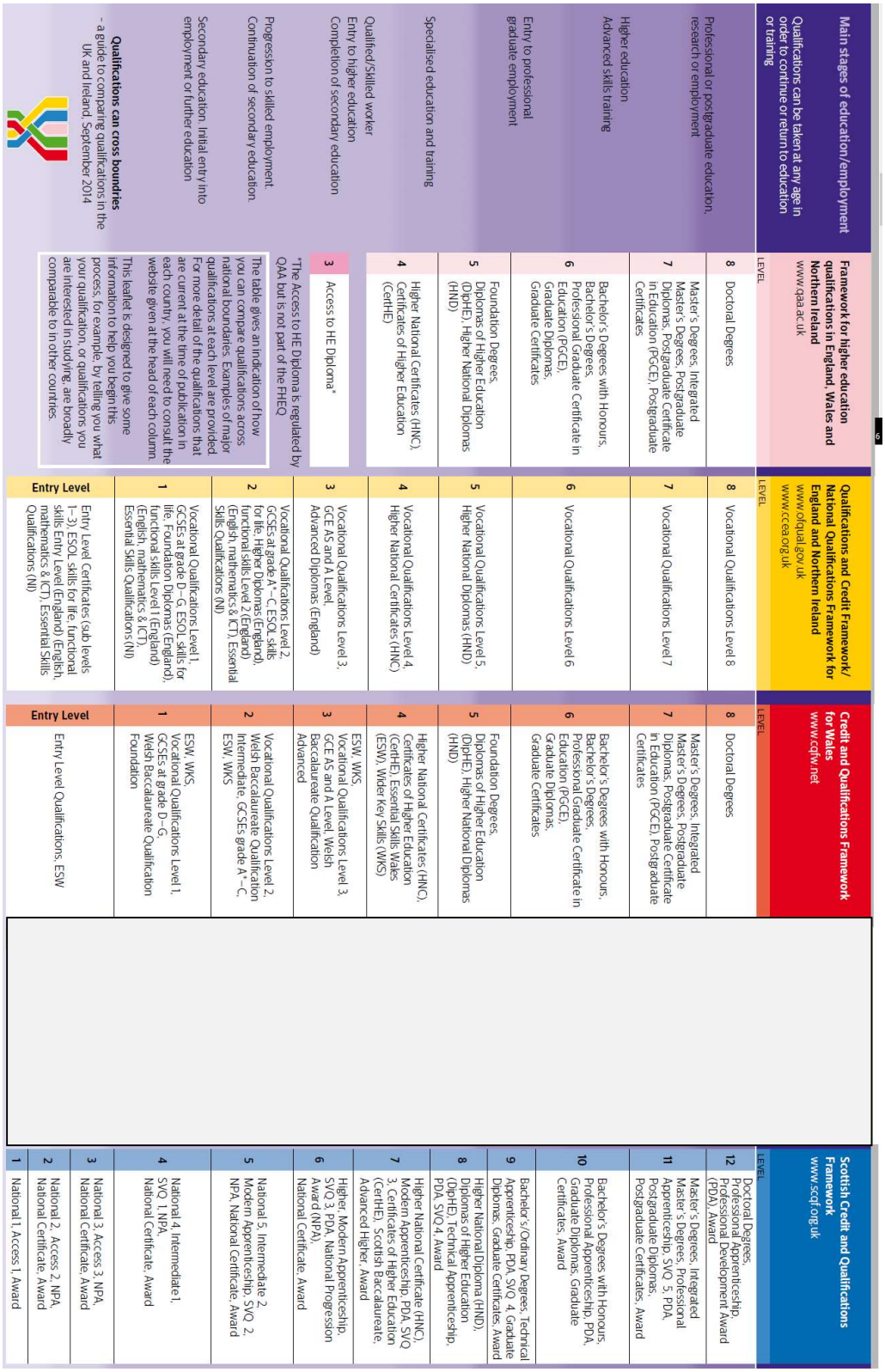
(3) www.qaa.ac.uk/; academicinfrastructure/fheq.

(4) Approximately lower secondary level.

(5) Approximately upper secondary level.

Source: Compiled by QCA (Cuddy & Leney, 2005, p. 18).

FIGURE 55 GUIDE TO COMPARING QUALIFICATIONS IN THE UK AND IRELAND



Source: (QAA, et al., 2014, p. 1).

6.5.4 ECTS and ECVET credit system

Apart from the levels, in England, Northern Ireland and Wales the QCF consisted of a system of units and credits. One credit was based on 10 hours of learning, regardless of where and when the learning took place. The QCF also included principles for assembling qualifications from units, specifying which units had to be achieved for each qualification. A set of principles for recognising prior certified and non-certified learning was also included (CEDEFOP, 2012 NQF, pp. 226-239).

In the case of the new Regulated Qualifications Framework - RQF it depends on the education provider. If an Awarding Organisation decides to use credit, credit is calculated as Total Qualification Time - TQT divided by 10 (PEARSON, 2015).

In Scotland, one SCQF Credit Point represents a notional 10 hours of learning time which includes everything a learner has to do to achieve the outcomes in a qualification including the assessment procedures. In some cases, learners can transfer SCQF credit points to other learning programmes to ensure that they do not have to repeat any learning they have already undertaken. Universities and colleges, SQA and other awarding bodies determine the amount of the credit points already received from previous learning can be transferred into their new programmes. In all cases of credit transfer the accepting learning institution decides how many credit points can be transferred (SCQF, 2016).

Many Higher education institutions use the Credit Accumulation and Transfer Scheme (CATS) to track the evolution through the degree courses and to movement between courses and institutions (SEEC, 2011). One credit is equivalent to 10 notional hours of study.

CATS schemes in use in Higher Education in the UK include CATS (England & Northern Ireland), SCOTCAT (Scotland), the Credit and Qualifications Framework for Wales

credit framework (Wales), the Learning and Skills Development Agency credit framework and Open College Network credits (HIGHER EDUCATION STATISTICS AGENCY, 2016).

The official equivalence with the European Credit Transfer and Accumulation System – ECTS of two UK Credits equals one ECTS Credit, is based on the fact that 120 UK Credits are offered during an academic year and 60 ECTS are the expected result of an academic year (QUALITY ASSURANCE AGENCY, 2008).

6.5.5 EQAVET quality assurance

In England, in Wales (where it is named Dysg) and in Northern Ireland, the Department for Employment and Learning's (DEL) Quality Improvement Team is in charge of the Quality Standards and dissemination of good practice for most of the DEL funded provision but not for the Quality Agenda in Northern Ireland. In Scotland, the dissemination is done by the Scottish Further Education Unit. Investors in People is a national quality standard for improving an organisation's performance taking into account good practice.

The EQAVET Secretariat offers a description of the different institutions in charge of VET quality assurance in the four UK countries (EQAVET Secretariat, 2015 UK a):

England: The Ofsted – the Office for Standards in Education, Children's Services and Skills – integrated on 1 April 2007 four previously separate inspectorates: the Adult Learning Inspectorate, the Commission for Social Care Inspection, Her Majesty's Inspectorate of Court Administration and the Office of Her Majesty's Chief Inspector of Schools. Ofqual is the regulator of qualifications, exams and tests.

The Department for Children, Schools and Families – DCSF – was created in 2007 to "do more to ensure that every child gets a world-class education". In October 2008 the Centre for Excellence in Leadership (CEL) and the Quality Improvement Agency (QIA) in England became the Learning and Skills Improvement Service (LSIS), an organization designed to raise the quality of education and training in the learning and skills sector at further education level. The Framework for Excellence was developed in 2007 to raise the quality of further education.

Wales: Her Majesty's Inspectorate for Education and Training (Estyn) is in charge of the VET inspection. The National Council for Education and Training for Wales is in charge of quality assurance and takes into account the Quality and Effectiveness Framework (QEF) for post-16 learning, implemented in 2009.

Northern Ireland: Education and Training Inspectorate is in charge of inspecting VET quality. Success through Excellence is the quality improvement strategy for vocational training. VET providers must adhere to the Education and Training Inspectorate's Improving Quality Raising Standards guidelines, which have a strong focus on self-evaluation. The Department for Employment and Learning also runs a list of programmes that focus on improving VET quality.

Scotland: HM Inspectorate of Education is the VET inspection body. The Scottish Qualifications Authority (SQA) is the national body responsible for the design, development, accreditation, verification, quality assurance and certification of vocational education.

6.5.6 Erasmus+ VET Mobility

The Erasmus+ UK National Agency, awarded during the period 2014/2016 Erasmus+ KA102 VET funds to 311 projects proposed by 211 different institutions. 11% of these institutions received funds during the three years. The average amount of projects per institution was 1.47 (see Table 46).

In 2014 the amount of 9,638,608 € in KA 102 grants was distributed to 76 projects, in 2015 the total of 18,615,698 € went to 130 projects and in 2016 the amount of 20,603,589 € was assigned to 105 projects (see Table 44).

54.21% Students with a Fair Access to Funds – SFAF, (see Equation 2) of all the British students had the possibility to benefit, during 2014, from a standard amount of KA 102 grants, RME between 50% and 200% (see Equation 1), 75.39% in 2015, 85.08% in 2016, making an average in the period of SFAF=71.56% (see Table 45).

The National Equity - NE (see Equation 3) determines if the funds have been mathematically equally distributed, meaning NE=100% that all the students had equal chances to receive funds and NE=0% that no students had access to funds. In the case of the United Kingdom, the National Equity was 69.87% in 2014, 80.44% in 2015 and 81.79% in 2016. The average value for the period was NE=77.37% (see Table 45).

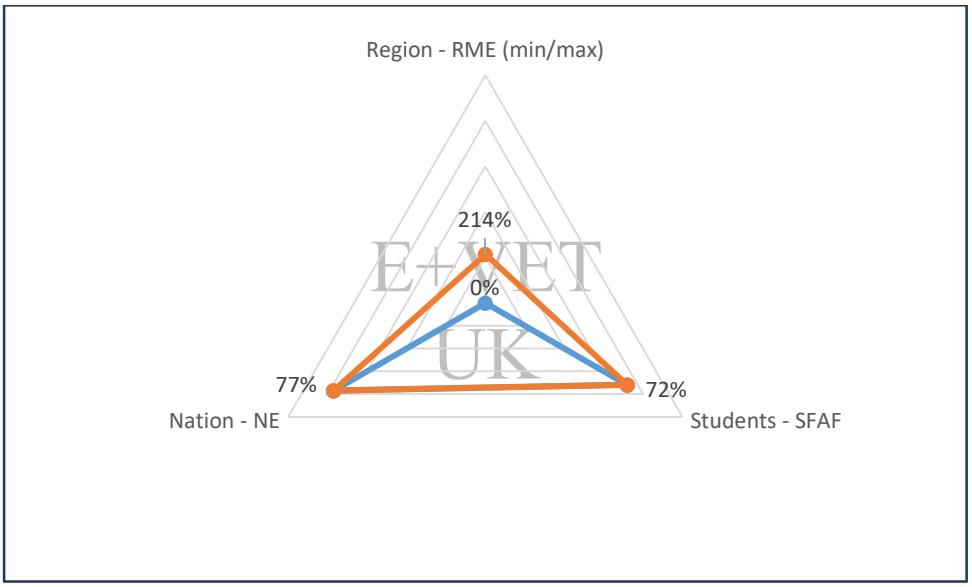
On average, during the whole period the amount received per project was 155,415 € and each of the most frequent-sized projects received 0,4% of the total national budget. There were on average 18% of these frequent-sized projects that received 6% of the national budget (see Table 44).

The first 20% of the national budget was awarded to the 5.33 (on average) biggest projects. These projects represent 5% of all the projects (see Table 44).

The first 50% of the national budget was awarded to the 16.67 (on average) biggest projects. These projects represent 16 % of all the projects (see Table 44).

During period 2014-2016 the region of Northern Ireland had the maximum Regional Mobility Efficiency, RME=214% and East of England the minimum, RME=11% (see Table 50).

FIGURE 56 UNITED KINGDOM- REGIONAL, STUDENTS´ AND NATIONAL 2014/16 AVERAGE VALUES



Source: Compiled by the author with data from Table 45 and Table 50. (RME values presented 10 times smaller).

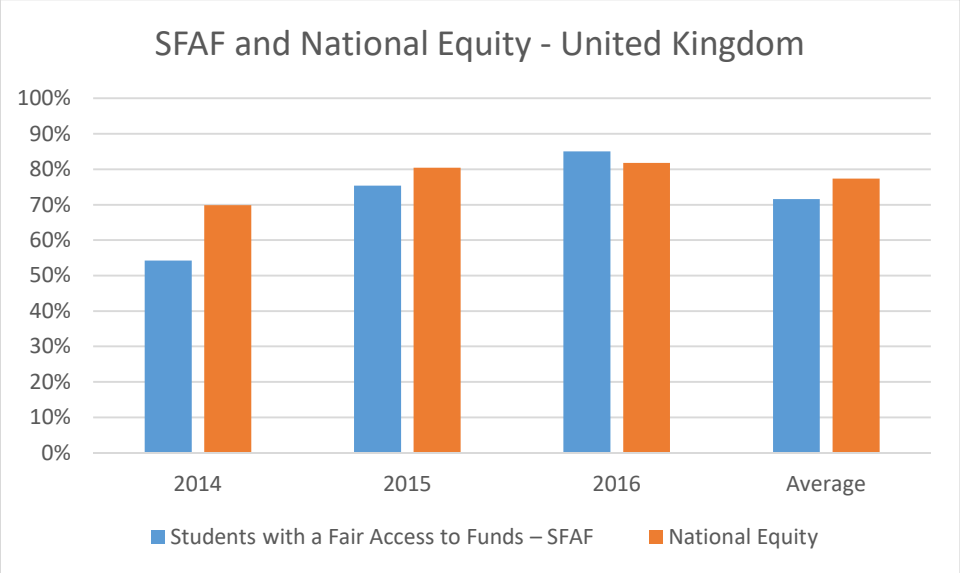
The funding data of years 2014, 2015 and 2016 was provided by the Erasmus+ UK National Agency (ERASMUS+ UK NATIONAL AGENCY, 2016). The information about the amount of students in each region was provided by the UK Government for England (UK GOVERNMENT, 2012 E), Northern Ireland (UK GOVERNMENT, 2012 NI) and Wales (UK GOVERNMENT, 2014) and by the Scottish Government (SCOTTISH GOVERNMENT, 2013). This data was used to perform the estimations and create the graphs available in this section and section 7.4.

TABLE 44 UNITED KINGDOM - MONITORING ERASMUS+ VET 2014/2016

	2014	2015	2016	Average
National budget	9,638,608 €	18,615,698 €	20,603,589 €	16,285,965 €
Number of projects	76	130	105	104
Biggest Project	736,427 €	800,109 €	787,104 €	774,547 €
Smallest Project	5,557 €	5,300 €	3,540 €	4,799 €
Average Project	126,824 €	143,198 €	196,225 €	155,415 €
Projects / Region	6.33	10.83	8.75	8.64
€/ Region	803,217 €	1,551,308 €	1,716,966 €	1,357,164 €
Amount of projects that represent 20% of the budget	4	6	6	5.33
… percentage of nations total	5.3%	5%	6%	5%
Amount of projects that represent 50% of the budget	13	20	17	16.67
… percentage of nations total	17%	15%	16%	16%
Most frequent size, in % of national budget	0.6%	0.3%	0.2%	0.4%
amount of frequent size projects	14	26	15	18.33
amount of frequent size projects, % over total	18%	20%	14%	18%
… and represent % of the total budget	8%	8%	3%	6%
Students in regions with more than the national average budget	50.76%	53.78%	57.25%	53.93%
Students in regions with less than the national average budget	49.24%	46.22%	42.75%	46.07%
Students in regions with more than double the national average budget	9.95%	1.73%	1.73%	4.47%
Students in regions with less than half the national average budget	35.85%	22.89%	13.20%	23.98%
Students in regions with no access to funds	0.00%	0.00%	0.00%	0.00%
Students with a Fair Access to Funds – SFAF	**54.21%**	**75.39%**	**85.08%**	**71.56%**
National equity	**69.87%**	**80.44%**	**81.79%**	**77.37%**
Regions	12	12	12	12
Regions with biggest project greater than 30%	10	6	7	7.67
… percentage of nations total	83%	50%	58%	64%
Regions with biggest project greater than 50%	3	2	2	2.33
… percentage of nations total	25%	17%	17%	19%
Institutions that have always received funds (2014/2016)				**11%**
Average projects per institution (2014/2016)				**1.47**

Source: Compiled by the author with the data referenced at the beginning of this section

FIGURE 57 UNITED KINGDOM - SFAF AND NATIONAL EQUITY 2014/2016



Source: Compiled by the author with the data referenced at the beginning of this section

TABLE 45 UNITED KINGDOM - SFAF AND NATIONAL EQUITY 2014/2016

	2014	2015	2016	Average
Students with a Fair Access to Funds – SFAF	54%	75%	85%	72%
National Equity	70%	80%	82%	77%

Source: Compiled by the author with the data referenced at the beginning of this section

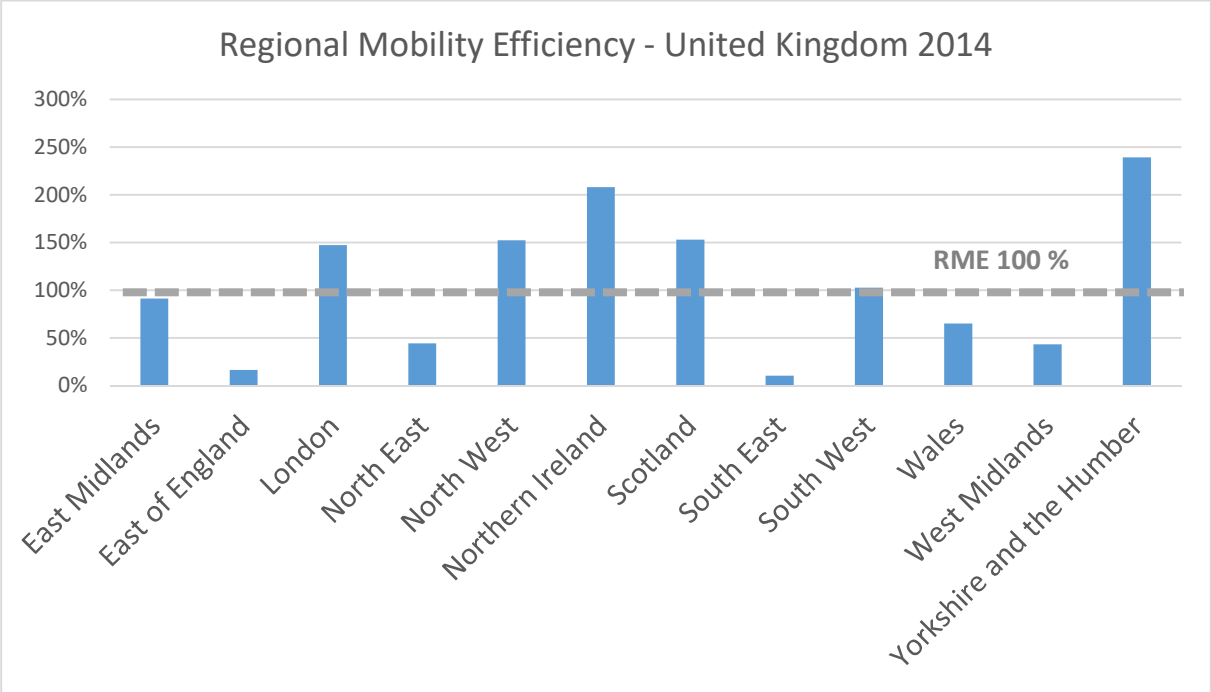
TABLE 46 UNITED KINGDOM - TIMES AN INSTITUTION HAS BEEN FUNDED 2014/2016

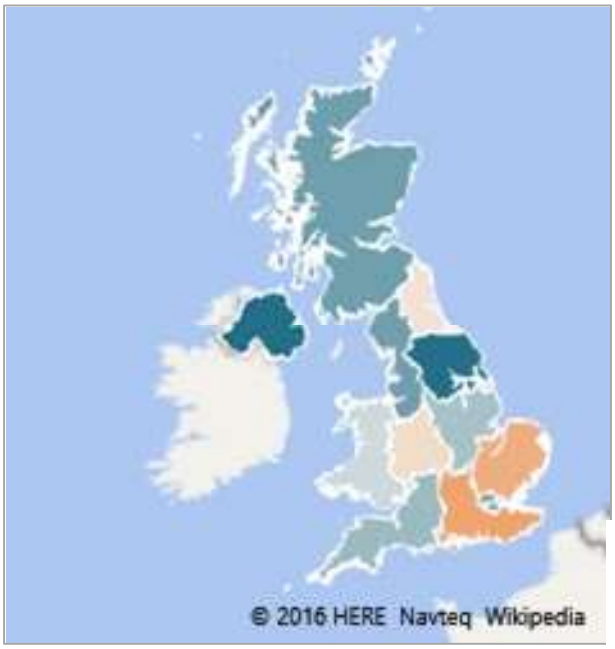
	Times an institution has been funded 2014/2016						
Region	Once	Twice	Always	Always (% of regional institutions)	Institutions in the region	Institutions from national total	Regional regularity
East Midlands	8	4	3	20%	15	7%	2.81
East of England	2	1	1	25%	4	2%	13.19
London	17	6	4	15%	27	13%	1.16
North East	6	2	0	0%	8	4%	0.00
North West	19	6	3	11%	28	13%	0.81
Northern Ireland	3	4	2	22%	9	4%	5.21
Scotland	24	4	4	13%	32	15%	0.82
South East	13	3	1	6%	17	8%	0.73
South West	11	3	1	7%	15	7%	0.94
Wales	7	5	1	8%	13	6%	1.25
West Midlands	8	9	1	6%	18	9%	0.65
Yorkshire and the Humber	16	7	2	8%	25	12%	0.68
Total institutions	134	54	23	11%	211	100%	0.11
Total projects	134	108	69		311		

Source: Compiled by the author with the data referenced at the beginning of this section. The regional regularity is the percentage of regional institutions that have always received funds divided by the percentage of regional institutions from the national total.

During the period 2014/2016, 23 out of 211 institutions were funded each of the three years. The region North East had no institutions receiving funds throughout the total period.

FIGURE 58 UNITED KINGDOM - ERASMUS+ VET RME 2014





Region	RME 2014
East Midlands	91%
East of England	16%
London	148%
North East	44%
North West	152%
Northern Ireland	208%
Scotland	153%
South East	10%
South West	103%
Wales	65%
West Midlands	43%
Yorkshire and the Humber	239%

NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

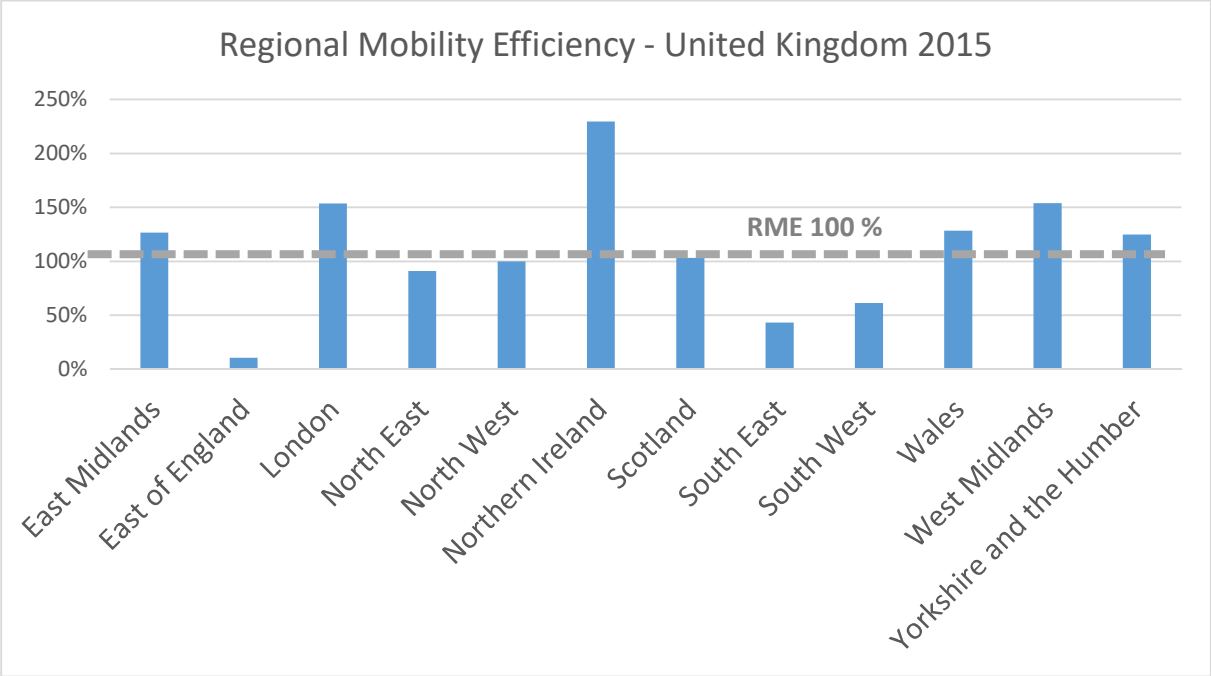
Source: Compiled by the author with the data referenced at the beginning of this section.

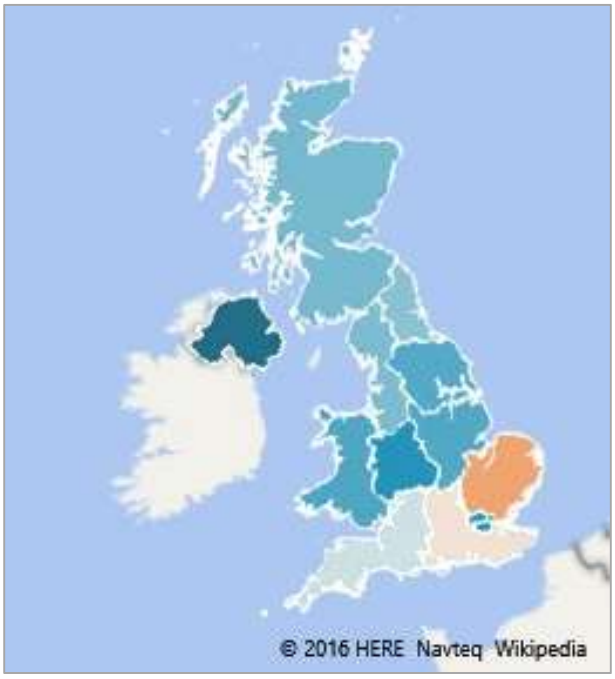
TABLE 47 UNITED KINGDOM - ERASMUS+ VET REGIONAL DATA 2014

UNITED KINGDOM 2014	Budget	% from total budget	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects per 100 K Students	€/ Project	€/ Student	Regional Mobility Efficiency	Inequity	Inequity	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
East Midlands	610,100 €	6.3%	96200	6.9%	5	6.6%	228,094 €	37%	2.37%	5.20	122,020 €	6 €	91%	-1%	1%		6.92%			
East of England	146,831 €	1.5%	128570	9.2%	3	3.9%	86,320 €	59%	0.90%	2.33	48,944 €	1 €	16%	-8%	8%		9.25%		9.25%	
London	1,703,351 €	17.7%	166530	12.0%	11	14.5%	404,760 €	24%	4.20%	6.61	154,850 €	10 €	148%	6%	6%	11.98%				
North East	168,197 €	1.7%	54870	3.9%	3	3.9%	87,051 €	52%	0.90%	5.47	56,066 €	3 €	44%	-2%	2%		3.95%		3.95%	
North West	1,641,323 €	17.0%	155330	11.2%	11	14.5%	436,895 €	27%	4.53%	7.08	149,211 €	11 €	152%	6%	6%	11.17%				
Northern Ireland	346,571 €	3.6%	24005	1.7%	4	5.3%	117,045 €	34%	1.21%	16.66	86,643 €	14 €	208%	2%	2%	1.73%		1.73%		
Scotland	1,395,347 €	14.5%	131421	9.5%	11	14.5%	604,454 €	43%	6.27%	8.37	126,850 €	11 €	153%	5%	5%	9.45%				
South East	134,559 €	1.4%	189580	13.6%	3	3.9%	60,092 €	45%	0.62%	1.58	44,853 €	1 €	10%	-12%	12%		13.64%		13.64%	
South West	813,307 €	8.4%	114150	8.2%	4	5.3%	529,550 €	65%	5.49%	3.50	203,327 €	7 €	103%	0%	0%	8.21%				
Wales	405,152 €	4.2%	89900	6.5%	5	6.6%	167,720 €	41%	1.74%	5.56	81,030 €	5 €	65%	-2%	2%		6.47%			
West Midlands	376,865 €	3.9%	125330	9.0%	6	7.9%	158,450 €	42%	1.64%	4.79	62,811 €	3 €	43%	-5%	5%	8.22%	9.02%		9.02%	
Yorkshire and the Humber	1,897,005 €	19.7%	114260	8.2%	10	13.2%	736,427 €	39%	7.64%	8.75	189,701 €	17 €	239%	11%	11%	50.76%	49.24%	9.95%	35.85%	0.00%
														0.00%	30.13%					

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 59 UNITED KINGDOM - ERASMUS+ VET RME 2015



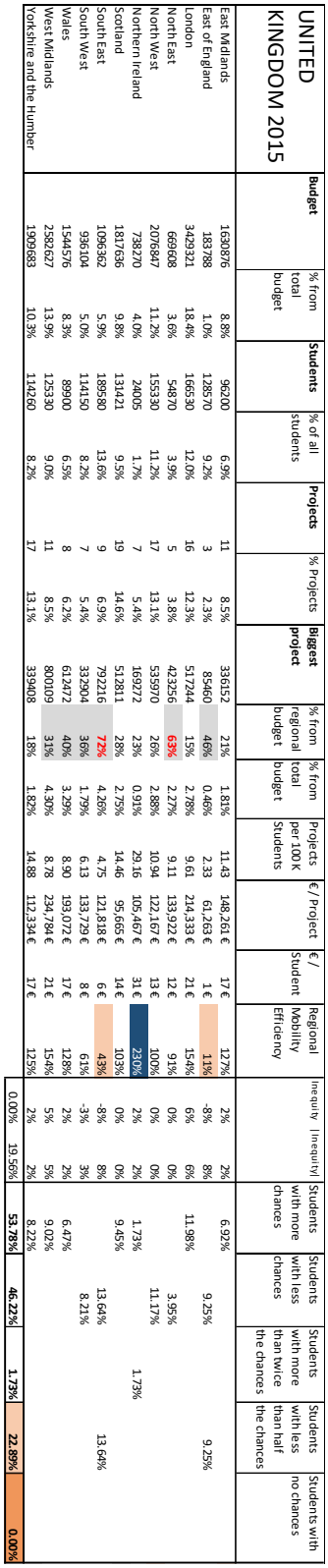


Region	RME 2015
East Midlands	127%
East of England	11%
London	154%
North East	91%
North West	100%
Northern Ireland	230%
Scotland	103%
South East	43%
South West	61%
Wales	128%
West Midlands	154%
Yorkshire and the Humber	125%

NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Source: Compiled by the author with the data referenced at the beginning of this section.

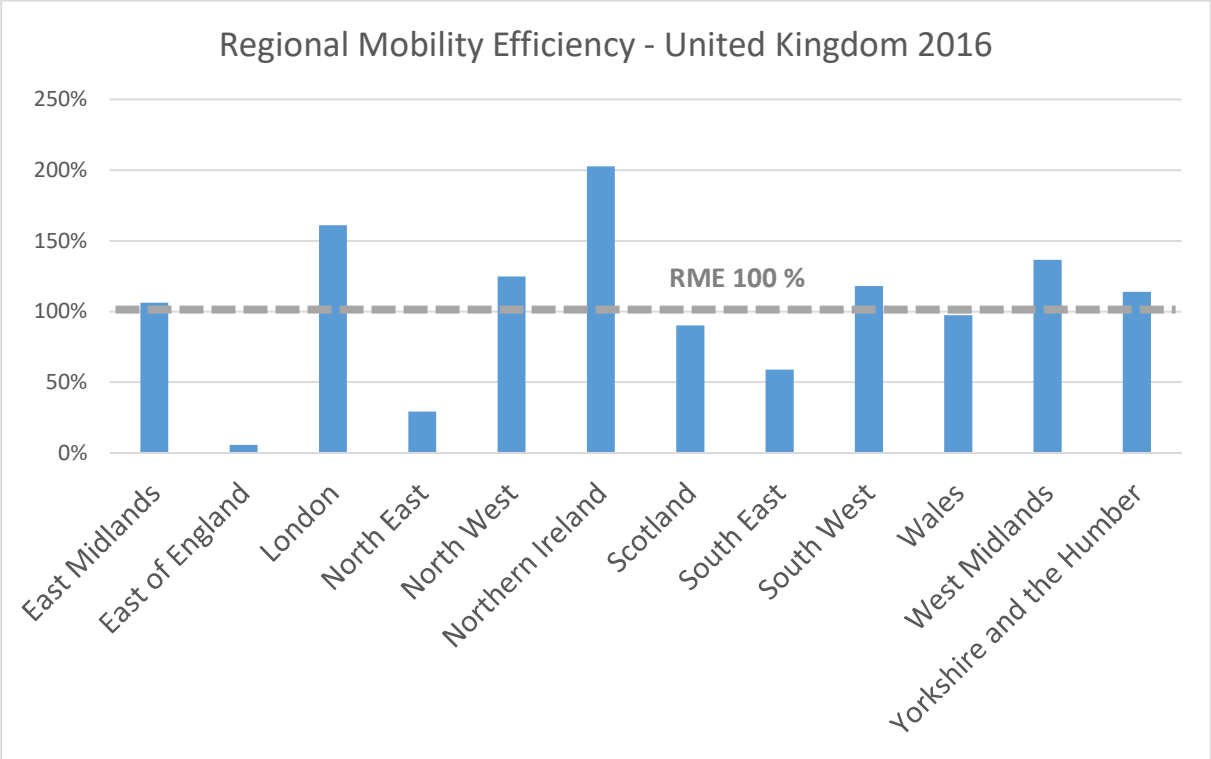
TABLE 48 UNITED KINGDOM - ERASMUS+ VET REGIONAL DATA 2015

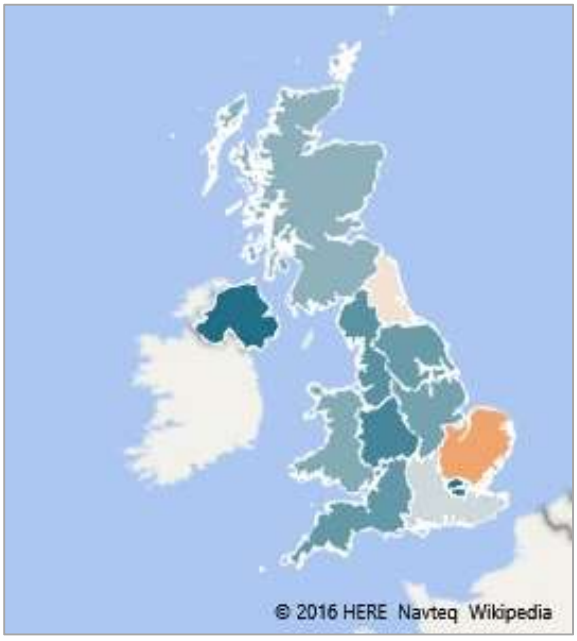


UNITED KINGDOM 2015	Budget	% from total budget	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects per 100 K Students	€ / Project	€ / Student	Regional Mobility Efficiency	Inequity	|Inequity|	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
East Midlands	1630876	8.8%	96200	6.9%	11	8.5%	336152	21%	1.81%	11.43	148,261 €	17 €	12.7%	2%	2%	6.92%				
East of England	183788	1.0%	128570	9.2%	3	2.3%	85460	46%	0.46%	2.33	61,263 €	1 €	11%	-8%	8%		9.25%		9.25%	
London	3429321	18.4%	166530	12.0%	16	12.3%	517244	15%	2.78%	9.61	214,333 €	21 €	15.4%	6%	6%	11.98%				
North East	669608	3.6%	54870	3.9%	5	3.8%	423256	63%	2.27%	9.11	133,922 €	12 €	9%	0%	0%		3.95%			
North West	2076847	11.2%	155330	11.2%	17	13.1%	535970	26%	2.88%	10.94	122,167 €	13 €	100%	0%	0%		11.17%			
Northern Ireland	738270	4.0%	24005	1.7%	7	5.4%	169272	23%	0.91%	29.16	105,467 €	31 €	230%	2%	2%	1.73%		1.73%		
Scotland	1817636	9.8%	131421	9.5%	19	14.6%	512811	28%	2.75%	14.46	95,665 €	14 €	103%	0%	0%	9.45%				
South East	1096362	5.9%	189580	13.6%	9	6.9%	792216	72%	4.26%	4.75	121,818 €	6 €	43%	-8%	8%		13.64%		13.64%	
South West	936104	5.0%	114150	8.2%	7	5.4%	332904	36%	1.79%	6.13	133,729 €	8 €	61%	-3%	3%		8.21%			
Wales	1544576	8.3%	89900	6.5%	8	6.2%	612472	40%	3.29%	8.90	193,072 €	17 €	128%	2%	2%	6.47%				
West Midlands	2582627	13.9%	125330	9.0%	11	8.5%	800109	31%	4.30%	8.78	234,784 €	21 €	154%	5%	5%	9.02%				
Yorkshire and the Humber	1909683	10.3%	114260	8.2%	17	13.1%	339408	18%	1.82%	14.88	112,334 €	17 €	125%	2%	2%	8.22%				
														0.00%	19.56%	53.78%	46.22%	1.73%	22.89%	0.00%

Source: Compiled by the author with the data referenced at the beginning of this section.

FIGURE 60 UNITED KINGDOM - ERASMUS+ VET RME 2016



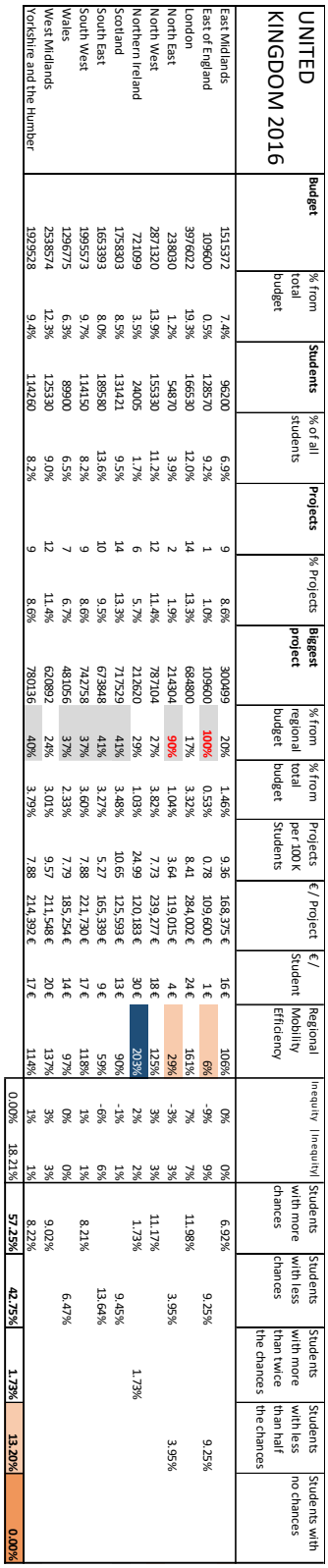


Region	RME 2016
East Midlands	106%
East of England	6%
London	161%
North East	29%
North West	125%
Northern Ireland	203%
Scotland	90%
South East	59%
South West	118%
Wales	97%
West Midlands	137%
Yorkshire and the Humber	114%

NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Source: Compiled by the author with the data referenced at the beginning of this section

TABLE 49 UNITED KINGDOM - ERASMUS+ VET REGIONAL DATA 2016



UNITED KINGDOM 2016	Budget	% from total budget	Students	% of all students	Projects	% Projects	Biggest project	% from regional budget	% from total budget	Projects per 100 K Students	€/ Project	€/ Student	Regional Mobility Efficiency	Inequity	Inequity	Students with more chances	Students with less chances	Students with more than twice the chances	Students with less than half the chances	Students with no chances
East Midlands	1515372	7.4%	96200	6.9%	9	8.6%	300499	20%	1.46%	9.36	168.375 €	16 €	100%	0%	0%	6.92%				
East of England	109600	0.5%	128570	9.2%	1	1.0%	109600	100%	0.53%	0.78	109.600 €	1 €	6%	-9%	9%		9.25%		9.25%	
London	3976022	19.3%	166530	12.0%	14	13.3%	684800	17%	3.32%	8.41	284.002 €	24 €	161%	7%	7%	11.98%				
North East	238030	1.2%	54870	3.9%	2	1.9%	214304	90%	1.04%	3.64	119.015 €	4 €	29%	-3%	3%		3.95%		3.95%	
North West	2871320	13.9%	155330	11.2%	12	11.4%	787104	27%	3.82%	7.73	239.277 €	18 €	125%	3%	3%	11.17%				
Northern Ireland	721099	3.5%	24005	1.7%	6	5.7%	212620	29%	1.03%	24.99	120.183 €	30 €	203%	2%	2%	1.73%		1.73%		
Scotland	1758303	8.5%	131421	9.5%	14	13.3%	717529	41%	3.48%	10.65	125.593 €	13 €	90%	-1%	1%		9.45%			
South East	1653393	8.0%	189580	13.6%	10	9.5%	673848	41%	3.27%	5.27	165.339 €	9 €	59%	-6%	6%		13.64%			
South West	1995573	9.7%	114150	8.2%	9	8.6%	742758	37%	3.60%	7.88	221.730 €	17 €	118%	1%	1%	8.21%				
Wales	1296775	6.3%	89900	6.5%	7	6.7%	481056	37%	2.33%	7.79	185.254 €	14 €	97%	0%	0%		6.47%			
West Midlands	2538574	12.3%	125330	9.0%	12	11.4%	620892	24%	3.01%	9.57	211.548 €	20 €	137%	3%	3%	9.02%				
Yorkshire and the Humber	1929528	9.4%	114260	8.2%	9	8.6%	780136	40%	3.79%	7.88	214.392 €	17 €	114%	1%	1%	8.22%				
														0.00%	18.21%	57.25%	42.75%	1.73%	13.20%	0.00%

Source: Compiled by the author with the data referenced at the beginning of this section

Regional Mobility Efficiency - RME

London, North West, Northern Ireland, and Yorkshire and the Humber are the 4 regions (out of 12) where the students could, the whole period of three years, receive more funds than average (RME>100%) (see Table 50).

Significant is the case of Northern Ireland with annual RMEs of 208%, 230% and 203%., bigger than 200%. This means the students in this region had access to a funding amount that doubled the national average (see Table 50).

East of England and South East are the 2 out of 12 regions with an, on average, RME lower than 50%. In the case of East of England students were always in a bad situation (RME<50%). The students in those regions could only access less than half the national average of funds (see Table 50).

On average, 53.93 % of the students were located in regions with an RME greater than 100%. This means these VET students had access to more KA102 grants than the national average € /student. 4.47 % of the students studied in regions that received more than twice this average (RME >200%) (see Table 44).

On average, 46.07 % of the students were located in regions with an RME smaller than 100%. This means these VET students had access to less KA102 grants than the national average € /student (see Table 44).

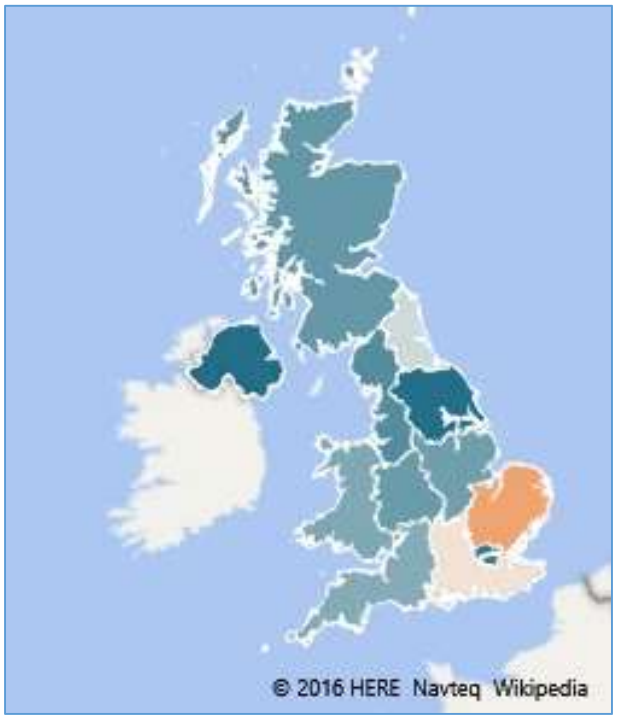
23,98% of the students studied in regions that received less than of half this average (RME <50%) (see Table 44).

TABLE 50 UNITED KINGDOM - REGIONAL MOBILITY EFFICIENCY RME 2014/2016

Region	2014	2015	2016	Average
East Midlands	91%	127%	106%	108%
East of England	16%	11%	6%	11%
London	148%	154%	161%	154%
North East	44%	91%	29%	55%
North West	152%	100%	125%	126%
Northern Ireland	208%	230%	203%	214%
Scotland	153%	103%	90%	116%
South East	10%	43%	59%	37%
South West	103%	61%	118%	94%
Wales	65%	128%	97%	97%
West Midlands	43%	154%	137%	111%
Yorkshire and the Humber	239%	125%	114%	159%

Source: Compiled by the author with the data referenced at the beginning of this section

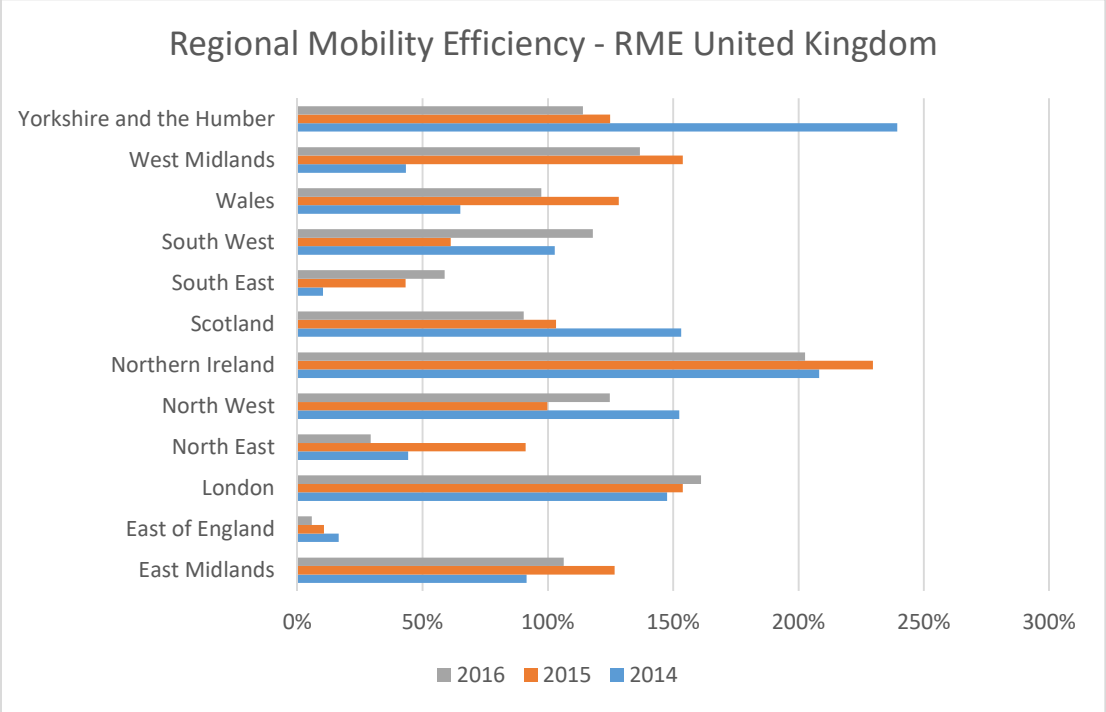
FIGURE 61 UNITED KINGDOM - AVERAGE RME 2014/2016



NOTE:
Blue represents high RME values, greater than 50%
Orange represents low RME values, lower than 50%

Source: Compiled by the author with the data referenced at the beginning of this section

FIGURE 62 UNITED KINGDOM - REGIONAL MOBILITY EFFICIENCY RME 2014/2016



Source: Compiled by the author with the data referenced at the beginning of this section

6.6 Summary: 5 countries, 5 VET situations

This chapter has described the situation of the VET studies in France, Germany, Italy, Spain and the United Kingdom.

It also included the description of the deployment of the EQF, NQF, ECVET, ECTS and EQAVET frameworks in the mentioned countries.

The last section of the information of each country was devoted to analysing the national results of the Erasmus+ VET funding during the period 2014/2016.

The next chapter provides an insight of all this data, compares all the information and outputs similarities and differences in the target countries.

7. Comparative study

The present chapter compares the situation and evolution of the key factors that play a major role in VET in France, Germany, Italy, Spain and the United Kingdom. These countries contain more than half of all the VET students in EU, 54% in 2012, (THE WORLD BANK, 2016).

On one hand, it presents the demographics, points out key values that describe innovation, informs about the VET population, links the VET structures and compares the European frameworks (EQF, credits and EQAVET).

On the other hand, this chapter presents the performance of the mentioned countries in the way they distribute the VET Erasmus+ mobility funds.

7.1 General context

The present chapter first describes in every section the information existing for every nation and then includes the tables and graphs that provide the detailed data.

7.1.1 Demographics

France (66 million), Germany (81 million), Italy (61 million), Spain (46 million) and the United Kingdom (65 million) had in 2014 similar populations, with Spain being the smallest and Germany the biggest of the five (see Table 51).

In Germany the population growth has been negative since 2006 (with the exceptions of 2011 and 2013) and in Spain it has been falling since 2007. France and the United Kingdom maintain a slightly positive growth and in Italy it is slightly increasing since 2000 (see Table 52).

The life expectancy at birth is very similar in the five countries (France 82.4, Germany 80.8, Italy 82.7, Spain 83.1 and the United Kingdom 81.1, in 2014) and is steadily increasing (see Table 54).

Unemployment offers in 2014 a heterogeneous picture. In 2007 the values were quite similar and stood between 5.3% in the United Kingdom and 8.7% in Germany, but the economic crisis has transformed the 2014 situation and boosted unemployment in Spain up to 24.4% and in Italy to 12.7%. It went slightly up in France to 9.9% and in the United Kingdom to 6.1% and in Germany it has gone down to 5% (see Table 55).

Long-term unemployment has significantly increased during the last few years in Italy, from 44.3% in 2009 to 60.8% in 2014, Spain, from 18% in 2008 to 52.8% in 2014 and in the United Kingdom, from 22.2% in 2006 to 35.7% in 2014. In France it evolved from 34.9% in 2009 to 42.4% in 2014 and in Germany it has fallen from 56% in 2007 to 44% in 2014 (see Table 56).

A similar picture can be found in youth (ages 15-24) unemployment. Spain has the worst situation. It had 17.9% in 2006 and 53.2% in 2014, followed by Italy, with 20.4% in 2007 and 42.7% in 2014. In France, youth unemployment has gone from 18.6% in 2008 to 23.2% in 2014 and in the United Kingdom from 14% in 2006 to 16.9% in 2014. Germany has improved its figure of 13.8% in 2006 to 7.7% in 2014 (see Table 57).

The share of youth not in education, employment or training – NEET in 2014 is also worse in Italy 22.04% and Spain 17.04 %. They are followed by the United Kingdom 11.87 % and France 10.66%. Germany again sets the lowest value at 6.36% (see Table 58).

TABLE 51 DEMOGRAPHICS IN 2014

	France	Germany	Italy	Spain	UK
Population, total	66,217,509	80,970,732	60,789,140	46,476,032	64,559,135
Population growth (annual %)	0.44%	-1.42%	0.92%	-0.31%	0.67%
Population density (people per sq. km of land area)	120.9	232.3	206.7	92.9	266.9
GDP Growth (annual %)	0.18	1.6	-0.44	1.36	2.94
Life expectancy at birth, total (years)	82.4	80.8	82.7	83.1	81.1
Unemployment, total (% of total labor force) (national estimate)	9.9%	5.0%	12.7%	24.4%	6.1%
Long-term unemployment (% of total unemployment)	42.4%	44.0%	60.8%	52.8%	35.7%
Unemployment, youth total (% of total labor force ages 15-24) (national estimate)	23.2%	7.7%	42.7%	53.2%	16.9%
Share of youth not in education, employment, or training, total (% of youth population)	10.7%	63.6%	22.0%	17.1%	11.9%
Net migration (2012)	331,555	1,249,998	528,269	-593,069	900,000
International migrant stock (% of population) (2010)	10.3%	13.2%	7.5%	13.7%	10.3%

Source: World Development Indicators (THE WORLD BANK, 2016).

FIGURE 63 POPULATION GROWTH (ANNUAL %)

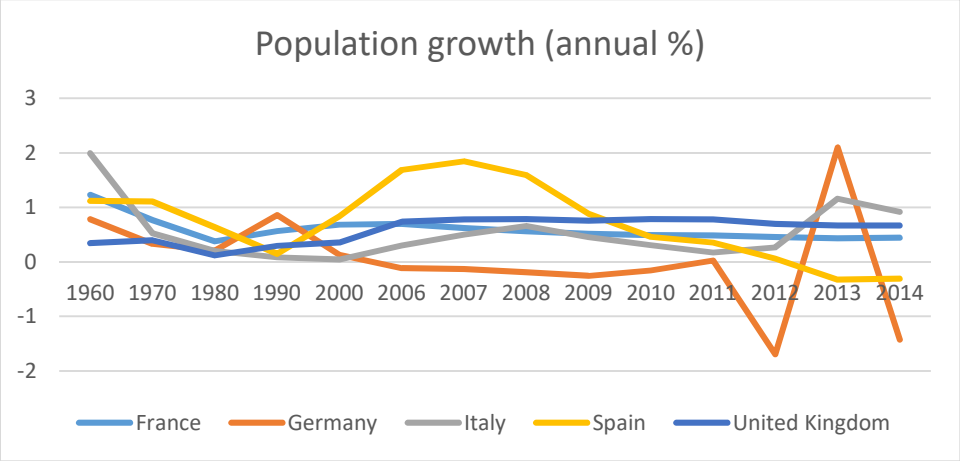


TABLE 52 POPULATION GROWTH (ANNUAL %)

	France	Germany	Italy	Spain	UK
1960	1.23	0.78	1.99	1.12	0.35
1970	0.77	0.33	0.53	1.11	0.40
1980	0.38	0.21	0.21	0.64	0.12
1990	0.57	0.86	0.08	0.15	0.30
2000	0.68	0.14	0.05	0.84	0.36
2006	0.70	-0.11	0.30	1.69	0.74
2007	0.62	-0.13	0.50	1.85	0.78
2008	0.56	-0.19	0.66	1.60	0.79
2009	0.51	-0.25	0.46	0.89	0.76
2010	0.49	-0.15	0.31	0.46	0.78
2011	0.48	0.03	0.17	0.36	0.78
2012	0.45	-1.69	0.27	0.06	0.70
2013	0.43	2.10	1.16	-0.33	0.67
2014	0.44	-1.42	0.92	-0.31	0.67

Annual population growth rate for year t is the exponential rate of growth of midyear population from year t-1 to t, expressed as a percentage. Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of the country of origin.

Source: Derived from total population. Population source: (1) United Nations Population Division. World Population Prospects, (2) Census reports and other statistical publications from national statistical offices, (3) Eurostat: Demographic Statistics, (4) United Nations Statistical Division. Population and Vital Statistics Reprot (various years), (5) U.S. Census Bureau: International Database, and (6) Secretariat of the Pacific Community: Statistics and Demography Programme. As mentioned in the World Development Indicators (THE WORLD BANK, 2016)

FIGURE 64 GDP GROWTH (ANNUAL %)

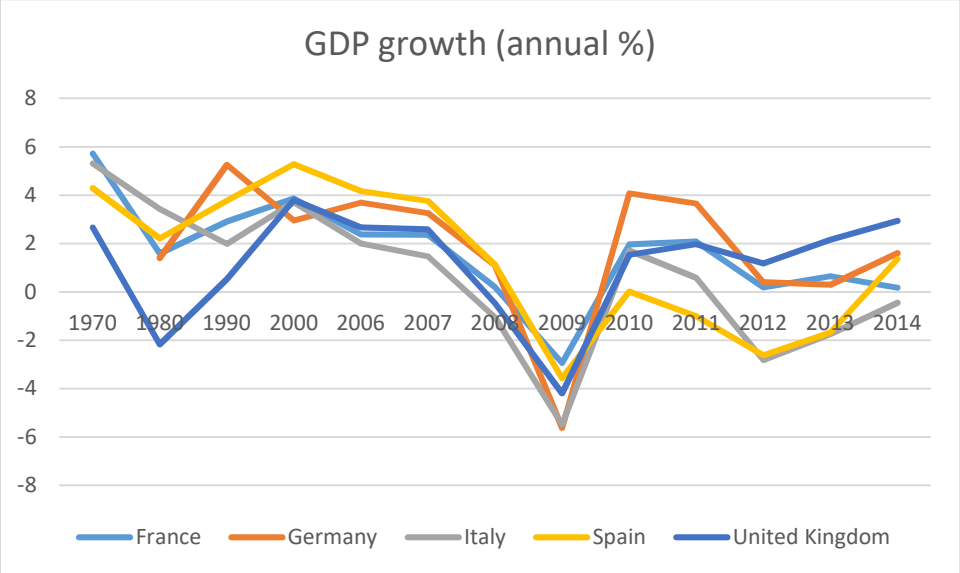


TABLE 53 GDP GROWTH (ANNUAL %)

	France	Germany	Italy	Spain	UK
1970	5.73		5.31	4.29	2.67
1980	1.59	1.41	3.43	2.21	-2.17
1990	2.91	5.26	1.99	3.78	0.54
2000	3.88	2.96	3.71	5.29	3.80
2006	2.37	3.70	2.01	4.17	2.66
2007	2.36	3.26	1.47	3.77	2.59
2008	0.20	1.08	-1.05	1.12	-0.47
2009	-2.94	-5.62	-5.48	-3.57	-4.19
2010	1.97	4.08	1.71	0.01	1.54
2011	2.08	3.66	0.59	-1.00	1.97
2012	0.18	0.41	-2.82	-2.62	1.18
2013	0.66	0.30	-1.75	-1.67	2.16
2014	0.18	1.60	-0.44	1.36	2.94

Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2005 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

Source: World Bank national accounts data, and OECD National Accounts data files as mentioned in the World Development Indicators (THE WORLD BANK, 2016).

FIGURE 65 LIFE EXPECTANCY AT BIRTH

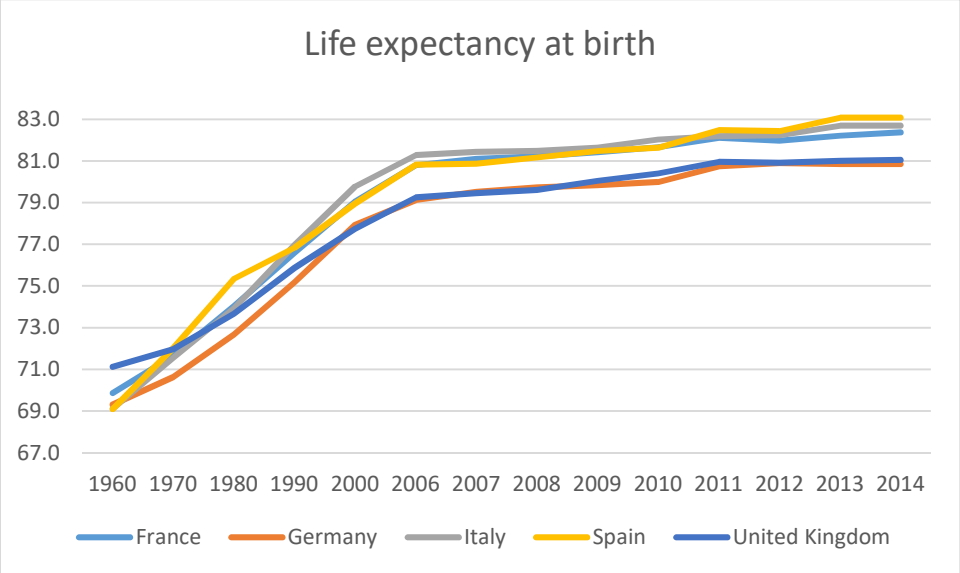


TABLE 54 LIFE EXPECTANCY AT BIRTH

	France	Germany	Italy	Spain	UK
1960	69.9	69.3	69.1	69.1	71.1
1970	71.7	70.6	71.6	72.0	72.0
1980	74.1	72.7	73.9	75.3	73.7
1990	76.6	75.2	77.0	76.8	75.9
2000	79.1	77.9	79.8	79.0	77.7
2006	80.8	79.1	81.3	80.8	79.2
2007	81.1	79.5	81.4	80.9	79.4
2008	81.2	79.7	81.5	81.2	79.6
2009	81.4	79.8	81.6	81.5	80.1
2010	81.7	80.0	82.0	81.6	80.4
2011	82.1	80.7	82.2	82.5	81.0
2012	82.0	80.9	82.2	82.4	80.9
2013	82.2	80.8	82.7	83.1	81.0
2014	82.4	80.8	82.7	83.1	81.1

Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life.

Source: Derived from male and female life expectancy at birth from sources such as: (1) United Nations Population Division. World Population Prospects, (2) Census reports and other statistical publications from national statistical offices, (3) Eurostat: Demographic Statistics, (4) United Nations Statistical Division. Population and Vital Statistics Report (various years), (5) U.S. Census Bureau: International Database, and (6) Secretariat of the Pacific Community: Statistics and Demography Programme as mentioned in the World Development Indicators (THE WORLD BANK, 2016).

FIGURE 66 UNEMPLOYMENT, TOTAL (%OF TOTAL LABOR FORCE) (NATIONAL ESTIMATE)

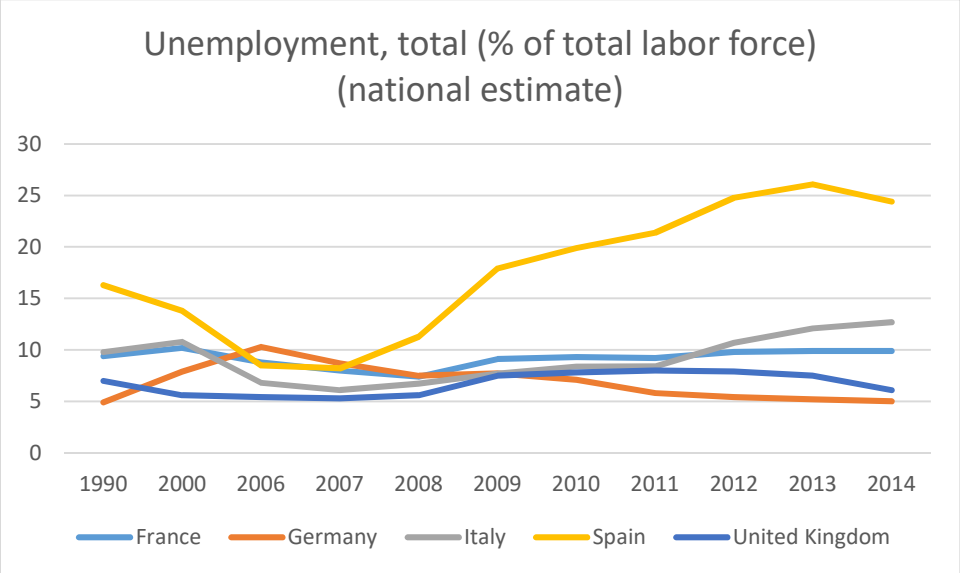


TABLE 55 UNEMPLOYMENT, TOTAL (%OF TOTAL LABOR FORCE) (NATIONAL ESTIMATE)

	France	Germany	Italy	Spain	UK
1990	9.4	4.9	9.8	16.3	7
2000	10.2	7.9	10.8	13.8	5.6
2006	8.8	10.3	6.8	8.5	5.4
2007	8	8.7	6.1	8.2	5.3
2008	7.4	7.5	6.7	11.3	5.6
2009	9.1	7.7	7.7	17.9	7.5
2010	9.3	7.1	8.4	19.9	7.8
2011	9.2	5.8	8.4	21.4	8
2012	9.8	5.4	10.7	24.8	7.9
2013	9.9	5.2	12.1	26.1	7.5
2014	9.9	5	12.7	24.4	6.1

Unemployment refers to the share of the labor force that is without work but available for and seeking employment. Definitions of labor force and unemployment differ by country.

Source: International Labour Organization, Key Indicators of the Labour Market database as mentioned in the World Development Indicators (THE WORLD BANK, 2016).

FIGURE 67 LONG TERM UNEMPLOYMENT (%)

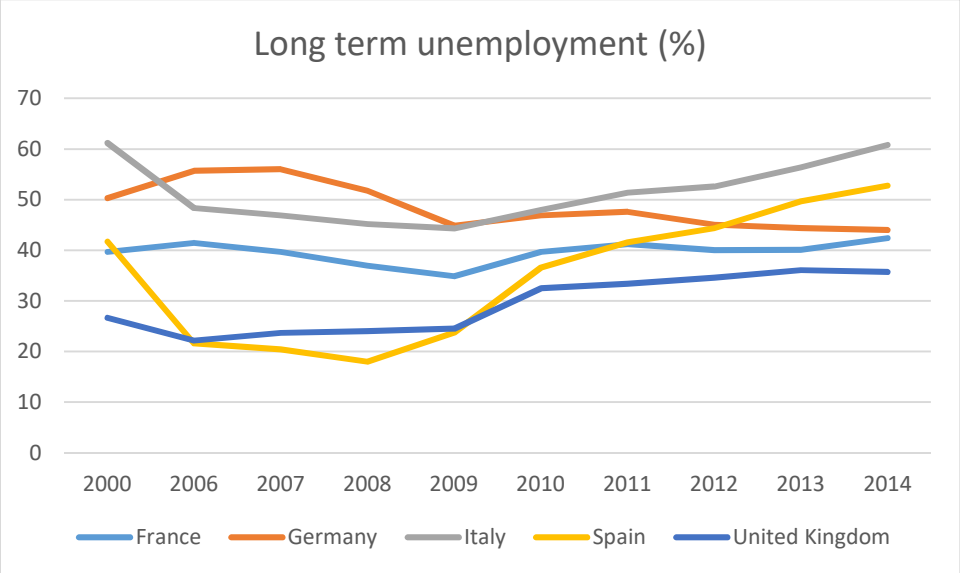


TABLE 56 LONG TERM UNEMPLOYMENT (%)

	France	Germany	Italy	Spain	UK
2000	39.7	50.3	61.2	41.7	26.7
2006	41.5	55.7	48.4	21.6	22.2
2007	39.7	56	46.9	20.4	23.7
2008	37	51.8	45.2	18	24
2009	34.9	44.9	44.3	23.8	24.5
2010	39.7	46.9	48	36.6	32.5
2011	41.2	47.6	51.4	41.6	33.4
2012	40	45.1	52.6	44.4	34.6
2013	40.1	44.4	56.4	49.7	36.1
2014	42.4	44	60.8	52.8	35.7

Long-term unemployment refers to the number of people with continuous periods of unemployment extending for a year or longer, expressed as a percentage of the total unemployed.

Source: International Labour Organization, Key Indicators of the Labour Market database as mentioned in the World Development Indicators (THE WORLD BANK, 2016).

FIGURE 68 UNEMPLOYMENT, YOUTH TOTAL (% OF TOTAL LABOR FORCE AGES 15-24) (NATIONAL ESTIMATE)

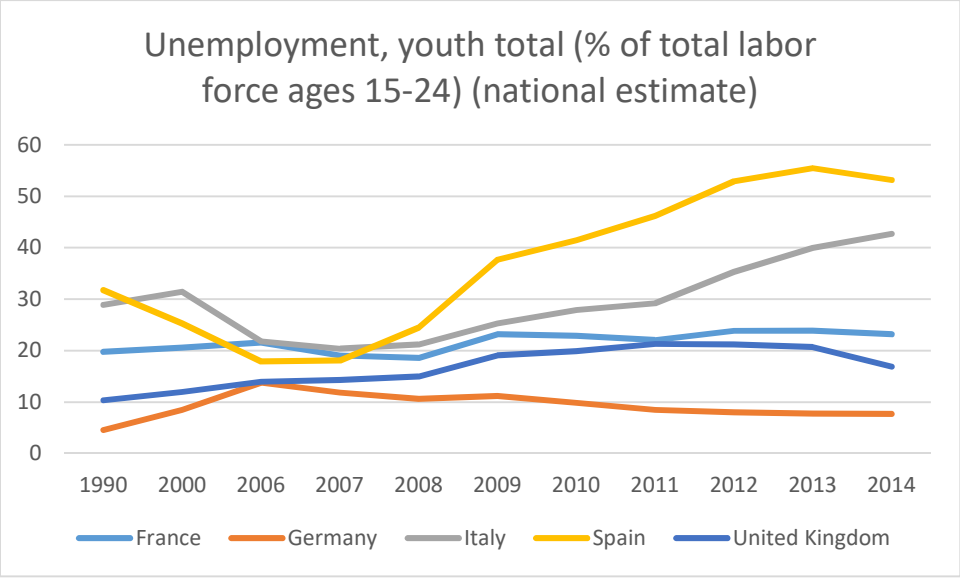


TABLE 57 UNEMPLOYMENT, YOUTH TOTAL (% OF TOTAL LABOR FORCE AGES 15-24) (NATIONAL ESTIMATE)

	France	Germany	Italy	Spain	UK
1990	19.8	4.6	28.9	31.8	10.4
2000	20.6	8.5	31.5	25.3	12
2006	21.6	13.8	21.8	17.9	14
2007	19.1	11.9	20.4	18.1	14.3
2008	18.6	10.6	21.2	24.5	15
2009	23.2	11.2	25.3	37.7	19.1
2010	22.9	9.9	27.9	41.5	19.9
2011	22.1	8.5	29.2	46.2	21.3
2012	23.9	8	35.3	52.9	21.2
2013	23.9	7.8	40	55.5	20.7
2014	23.2	7.7	42.7	53.2	16.9

Youth unemployment refers to the share of the labor force ages 15-24 without work but available for and seeking employment. Definitions of labor force and unemployment differ by country.

Source: International Labour Organization, Key Indicators of the Labour Market database as mentioned in the World Development Indicators (THE WORLD BANK, 2016) .

FIGURE 69 SHARE OF YOUTH NOT IN EDUCATION, EMPLOYMENT, OR TRAINING, TOTAL (% OF YOUTH POPULATION)

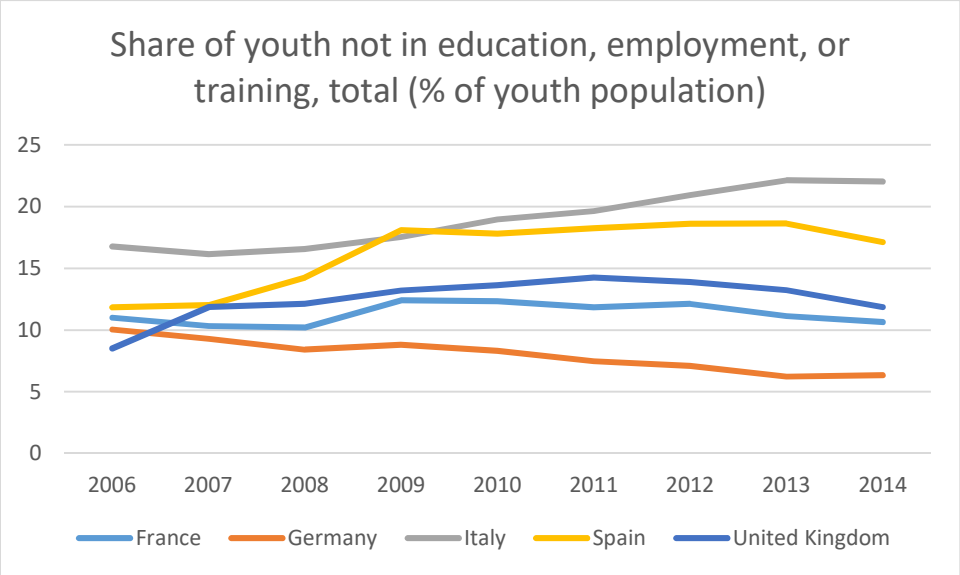


TABLE 58 SHARE OF YOUTH NOT IN EDUCATION, EMPLOYMENT, OR TRAINING, TOTAL (% OF YOUTH POPULATION)

	France	Germany	Italy	Spain	UK
2006	11	10.06	16.77	11.83	8.52
2007	10.34	9.3	16.14	12.03	11.88
2008	10.22	8.43	16.56	14.25	12.12
2009	12.41	8.8	17.55	18.09	13.22
2010	12.34	8.32	18.97	17.81	13.62
2011	11.85	7.49	19.64	18.25	14.25
2012	12.12	7.1	20.94	18.6	13.88
2013	11.15	6.25	22.14	18.63	13.25
2014	10.66	6.36	22.04	17.14	11.87

Share of youth not in education, employment or training (NEET) is the proportion of young people who are not in education, employment, or training to the population of the corresponding age group: youth (ages 15 to 24); persons ages 15 to 29; or both age groups.

Source: International Labour Organization, Key Indicators of the Labour Market database as mentioned in the World Development Indicators (THE WORLD BANK, 2016).

7.1.2 Innovation

The World Bank database offers information on different aspects that can describe how innovative a country is. The values presented in this section offer a perspective of each of the reference countries.

Germany is the leader in the group in the case of patents with 65,965 applications in 2014. With less than half the United Kingdom follows with 23,040, France with 16,533, Italy with 9,382 and Spain, with more than 20 times less applications than Germany, had only 3,178 applications in 2014 (see Table 61).

The amount of internet users is growing in the 5 countries. In 2014 Italy had 62 users per 100 inhabitants, Spain 76.2, France 83.8, Germany 86.2 and the United Kingdom 91.6 (see Table 59).

High-technology exports are important and increasing in France from 18.5% in 2007 up to 26.1 % in 2014. The rest of the countries are also increasing these exports, but at a lower speed reaching in 2014 in the United Kingdom 20.6%, in Germany 16%, in Italy 7.2% and in Spain 7% (see Table 60).

The 5 countries are increasing their share in renewable electricity. In 2014, Italy was the leader in the group with 31%, closely followed by Spain with 29.6%. Next came Germany, 22.9%, France, 14.9% and finally the United Kingdom with 11.4% (see Table 62).

The production of CO2 emissions is declining in all the 5 countries. France declared 5.2 metric tons per capita in 2011, Spain 5.8, Italy 6.7, the United Kingdom 7.1 and Germany 8.9 (see Table 63).

The expenditure in Research and Development has increased in the last few years and reached in 2013 in Germany 2.85% and in France 2.23%. The values are lower in the United Kingdom 1.63%, Italy 1.26% and Spain 1.24% (see Table 64).

In the case of researchers in R&D only Spain is decreasing their amount during the last years. In 2013, Germany reached 4,472 researchers per million people, followed by France with 4,153 researchers, the United Kingdom 4,055, Spain 2,653 and Italy 1,974 (see Table 65).

Similar is the situation of the technicians in R&D: France slightly increasing up to 1,902 technicians per million in 2013, Germany reaching 1,744 technicians in 2012, Spain falling to 1,223 and the United Kingdom increasing to 1,093. The database does not offer information about Italy (see Table 66).

FIGURE 70 INNOVATION INDICATORS IN 2012

Innovation in 2012	France	Germany	Italy	Spain	UK
Internet users (per 100 people)	81.4	82.3	55.8	69.8	87.5
High-technology exports (% of manufactured exports)	25.4%	15.7%	7.1%	7.0%	21.7%
High-technology exports (current million US$)	108,365	183,354	27,526	13,378	67,787
Patent applications	16,632	61,340	9,310	3,475	23,235
Renewable electricity output (% of total electricity output)	14.9%	22.9%	31.0%	29.6%	11.4%
CO2 emissions (metric tons per capita) (2011)	5.2	8.9	6.7	5.8	7.1
Research and development expenditure (% of GDP)	2.2%	2.9%	1.3%	1.3%	1.6%
Researchers in R&D (per million people)	4,076	4,379	1,853	2,718	4,029
Technicians in R&D (per million people)	1,875	1,744	n.a.	1,244	1,077

Source: World Development Indicators (THE WORLD BANK, 2016).

FIGURE 71 INTERNET USERS (PER 100 PEOPLE)

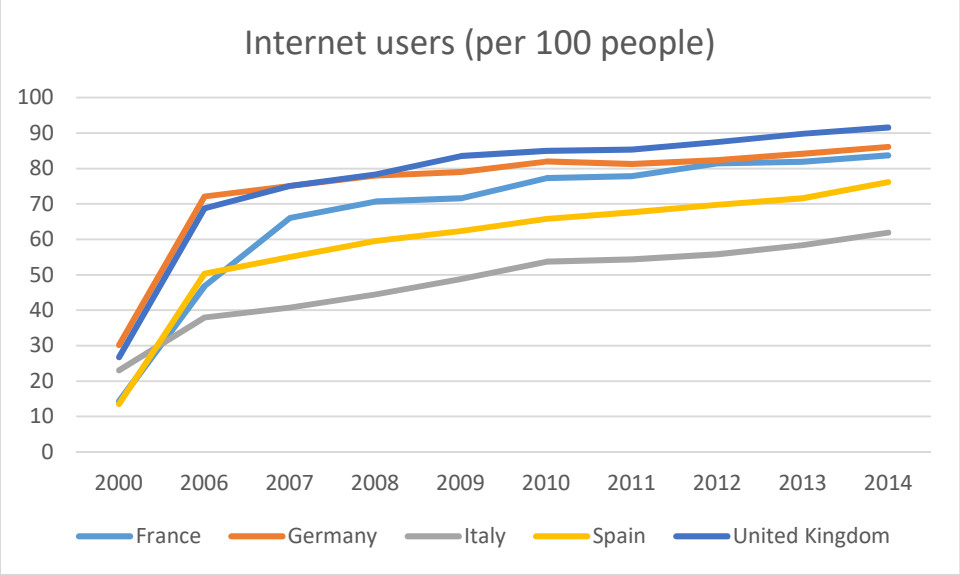


TABLE 59 INTERNET USERS (PER 100 PEOPLE)

	France	Germany	Italy	Spain	UK
2000	14.3	30.2	23.1	13.6	26.8
2006	46.9	72.2	38.0	50.4	68.8
2007	66.1	75.2	40.8	55.1	75.1
2008	70.7	78.0	44.5	59.6	78.4
2009	71.6	79.0	48.8	62.4	83.6
2010	77.3	82.0	53.7	65.8	85.0
2011	77.8	81.3	54.4	67.6	85.4
2012	81.4	82.3	55.8	69.8	87.5
2013	81.9	84.2	58.5	71.6	89.8
2014	83.8	86.2	62.0	76.2	91.6

Internet users are individuals who have used the Internet (from any location) in the last 12 months. Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV etc.

Source: International Telecommunication Union, World Telecommunication/ICT Development Report and database, and World Bank estimates as mentioned in the World Development Indicators (THE WORLD BANK, 2016).

FIGURE 72 HIGH -TECHNOLOGY EXPORTS (% OF MANUFACTURED EXPORTS)

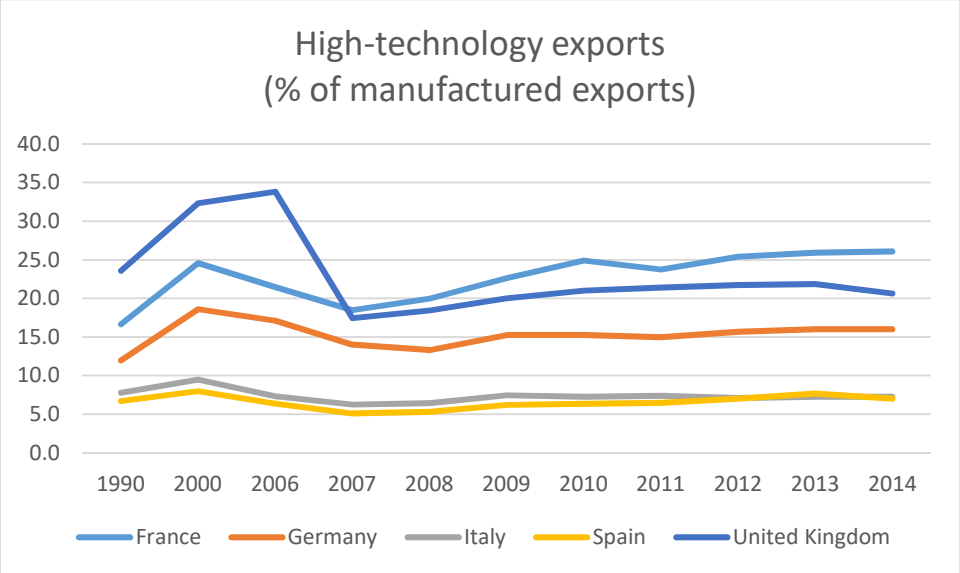


TABLE 60 HIGH -TECHNOLOGY EXPORTS (% OF MANUFACTURED EXPORTS)

	France	Germany	Italy	Spain	UK
1990	16.7	12.0	7.8	6.7	23.6
2000	24.6	18.6	9.5	8.0	32.4
2006	21.5	17.1	7.3	6.4	33.9
2007	18.5	14.0	6.3	5.1	17.5
2008	20.0	13.3	6.4	5.3	18.5
2009	22.6	15.3	7.5	6.2	20.0
2010	24.9	15.3	7.2	6.4	21.0
2011	23.7	15.0	7.4	6.5	21.4
2012	25.4	15.7	7.1	7.0	21.7
2013	25.9	16.0	7.2	7.7	21.9
2014	26.1	16.0	7.2	7.0	20.6

High-technology exports are products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery. Data are in current U.S. dollars.

Source: United Nations, Comtrade database as mentioned in the World Development Indicators (THE WORLD BANK, 2016).

FIGURE 73 PATENT APPLICATIONS

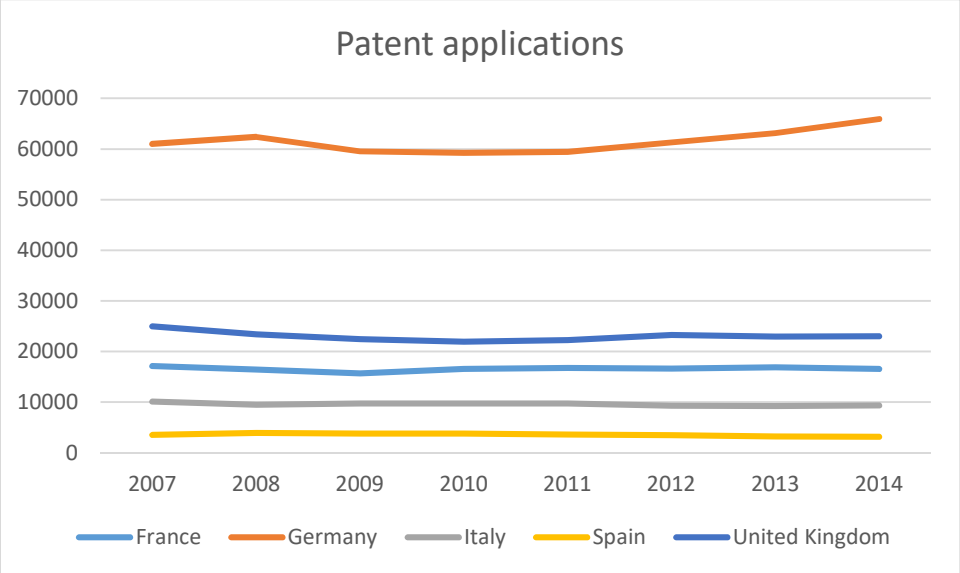


TABLE 61 PATENT APPLICATIONS

	France	Germany	Italy	Spain	UK
2007	17,109	60,992	10,125	3,532	24,999
2008	16,419	62,417	9,449	3,884	23,379
2009	15,693	59,583	9,717	3,803	22,465
2010	16,580	59,245	9,723	3,779	21,929
2011	16,754	59,444	9,721	3,626	22,259
2012	16,632	61,340	9,310	3,475	23,235
2013	16,886	63,167	9,212	3,244	22,938
2014	16,533	65,965	9,382	3,178	23,040

Patent applications are worldwide patent applications filed through the Patent Cooperation Treaty procedure or with a national patent office for exclusive rights for an invention--a product or process that provides a new way of doing something or offers a new technical solution to a problem. A patent provides protection for the invention to the owner of the patent for a limited period, generally 20 years.

Source: World Intellectual Property Organization (WIPO), WIPO Patent Report: Statistics on Worldwide Patent Activity. The International Bureau of WIPO assumes no responsibility with respect to the transformation of these data as mentioned in the World Development Indicators (THE WORLD BANK, 2016) .

FIGURE 74 RENEWABLE ELECTRICITY OUTPUT (% OF TOTAL ELECTRICITY OUTPUT)

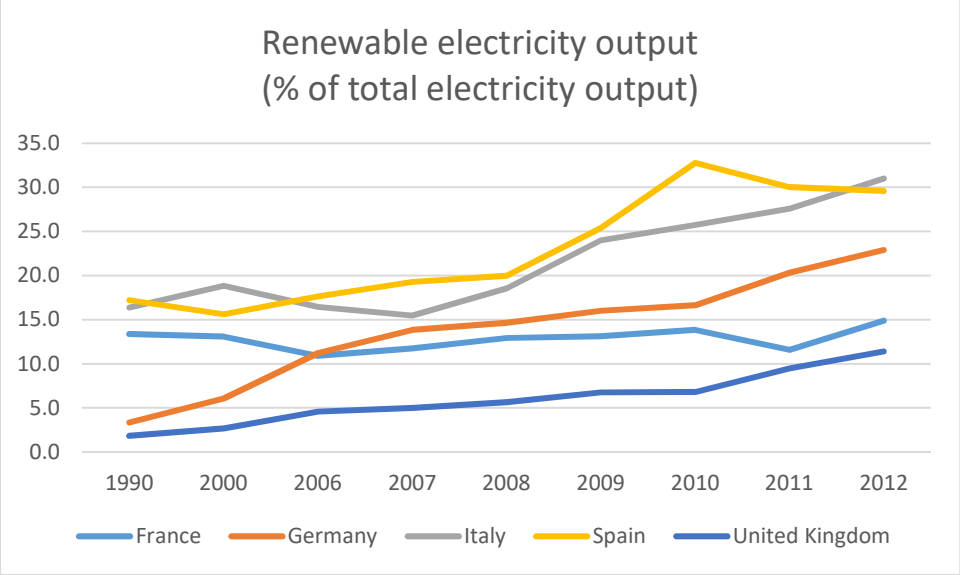


TABLE 62 RENEWABLE ELECTRICITY OUTPUT (% OF TOTAL ELECTRICITY OUTPUT)

	France	Germany	Italy	Spain	UK
1990	13.4	3.4	16.4	17.2	1.8
2000	13.1	6.1	18.9	15.6	2.7
2006	10.9	11.2	16.5	17.6	4.6
2007	11.7	13.9	15.5	19.3	5.0
2008	13.0	14.6	18.6	20.0	5.7
2009	13.1	16.0	24.0	25.4	6.8
2010	13.8	16.7	25.8	32.8	6.8
2011	11.6	20.3	27.6	30.0	9.5
2012	14.9	22.9	31.0	29.6	11.4

Renewable electricity is the share of electricity generated by renewable power plants in total electricity generated by all types of plants.

Source: © OECD/IEA and World Bank, based on IEA data in IEA World Energy Balances © OECD/IEA 2013 edition, subject to https://www.iea.org/t&c/termsandconditions/ as mentioned in the World Development Indicators (THE WORLD BANK, 2016).

FIGURE 75 CO2 EMISSIONS (METRIC TONS PER CAPITA)

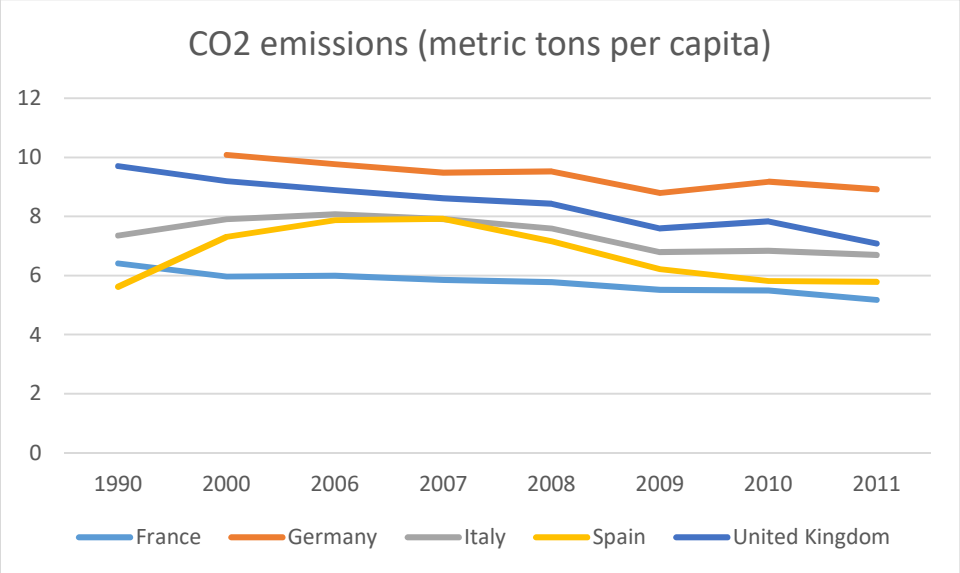


TABLE 63 CO2 EMISSIONS (METRIC TONS PER CAPITA)

	France	Germany	Italy	Spain	UK
1990	6.4		7.4	5.6	9.7
2000	6.0	10.1	7.9	7.3	9.2
2006	6.0	9.8	8.1	7.9	8.9
2007	5.9	9.5	7.9	7.9	8.6
2008	5.8	9.5	7.6	7.2	8.4
2009	5.5	8.8	6.8	6.2	7.6
2010	5.5	9.2	6.8	5.8	7.8
2011	5.2	8.9	6.7	5.8	7.1

Carbon dioxide emissions are those stemming from the burning of fossil fuels and the manufacture of cement. They include carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring.

Source: Carbon Dioxide Information Analysis Center, Environmental Sciences Division, Oak Ridge National Laboratory, Tennessee, United States as mentioned in the World Development Indicators (THE WORLD BANK, 2016).

FIGURE 76 RESEARCH AND DEVELOPMENT EXPENDITURE (% OF GDP)

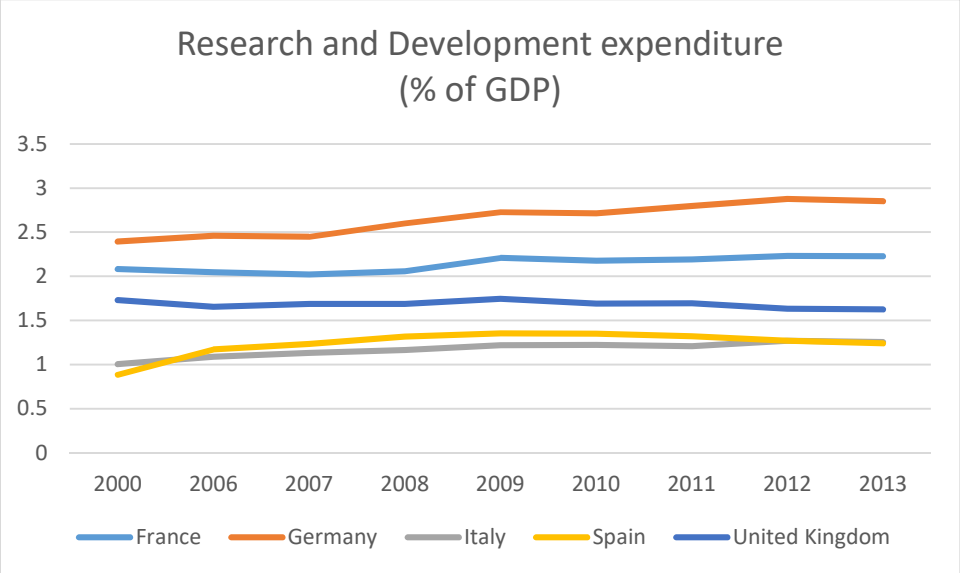


TABLE 64 RESEARCH AND DEVELOPMENT EXPENDITURE (% OF GDP)

	France	Germany	Italy	Spain	UK
2000	2.08	2.40	1.01	0.88	1.73
2006	2.05	2.46	1.09	1.17	1.65
2007	2.02	2.45	1.13	1.23	1.69
2008	2.06	2.60	1.16	1.32	1.69
2009	2.21	2.73	1.22	1.35	1.75
2010	2.18	2.72	1.22	1.35	1.69
2011	2.19	2.80	1.21	1.32	1.69
2012	2.23	2.88	1.27	1.27	1.63
2013	2.23	2.85	1.26	1.24	1.63

Expenditures for research and development are current and capital expenditures (both public and private) on creative work undertaken systematically to increase knowledge, including knowledge of humanity, culture, and society, and the use of knowledge for new applications. R&D covers basic research, applied research, and experimental development.

Source: United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics as mentioned in the World Development Indicators (THE WORLD BANK, 2016).

FIGURE 77 RESEARCHERS IN R&D (PER MILLION PEOPLE)

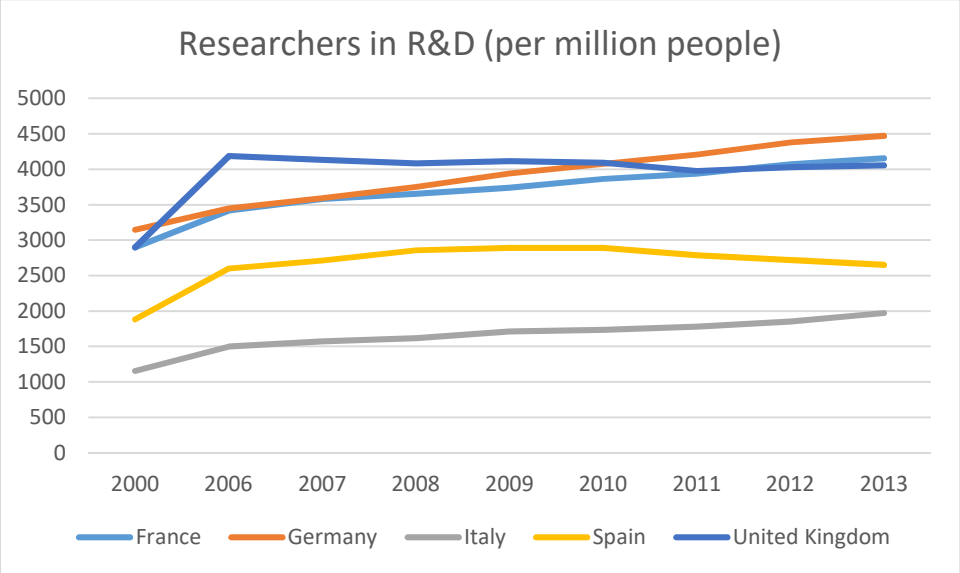


TABLE 65 RESEARCHERS IN R&D (PER MILLION PEOPLE)

	France	Germany	Italy	Spain	UK
2000	2,897	3,149	1,157	1,881	2,897
2006	3,418	3,452	1,501	2,600	4,188
2007	3,580	3,597	1,573	2,712	4,132
2008	3,654	3,752	1,614	2,859	4,084
2009	3,741	3,941	1,713	2,890	4,116
2010	3,868	4,078	1,736	2,889	4,091
2011	3,940	4,211	1,779	2,788	3,979
2012	4,076	4,379	1,853	2,718	4,029
2013	4,153	4,472	1,974	2,653	4,055

Researchers in R&D are professionals engaged in the conception or creation of new knowledge, products, processes, methods, or systems and in the management of the projects concerned. Postgraduate PhD students (ISCED97 level 6) engaged in R&D are included.

Source: United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics as mentioned in the World Development Indicators (THE WORLD BANK, 2016).

FIGURE 78 TECHNICIANS IN R&D (PER MILLION PEOPLE)

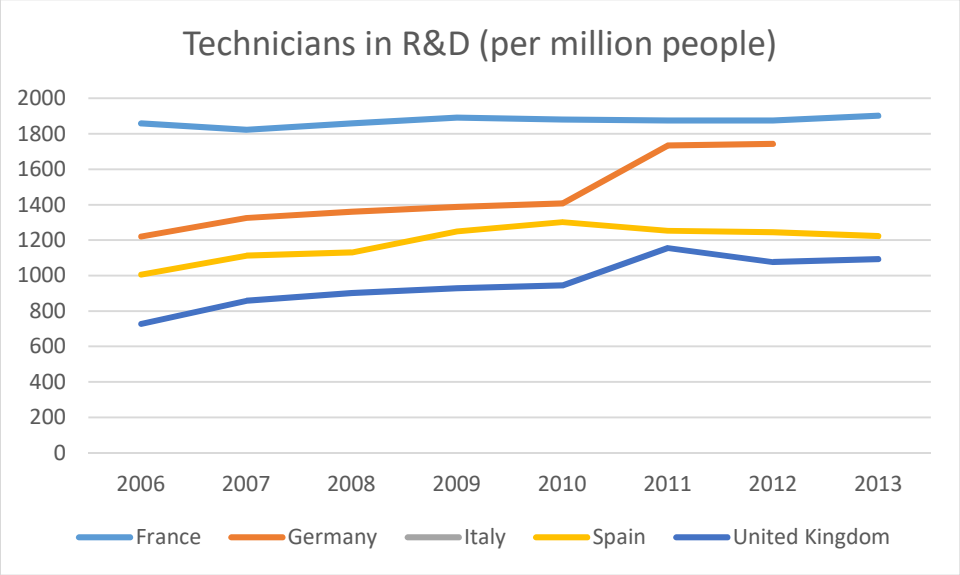


TABLE 66 TECHNICIANS IN R&D (PER MILLION PEOPLE)

	France	Germany	Italy	Spain	UK
2006	1,859	1,220	n.a.	1,007	728
2007	1,823	1,325	n.a.	1,114	858
2008	1,859	1,361	n.a.	1,131	901
2009	1,892	1,387	n.a.	1,250	928
2010	1,880	1,407	n.a.	1,302	945
2011	1,875	1,735	n.a.	1,254	1,156
2012	1,875	1,744	n.a.	1,244	1,077
2013	1,902	n.a.	n.a.	1,223	1,093

Technicians in R&D and equivalent staff are people whose main tasks require technical knowledge and experience in engineering, physical and life sciences (technicians), or social sciences and humanities (equivalent staff). They participate in R&D by performing scientific and technical tasks involving the application of concepts and operational methods, normally under the supervision of researchers.

Source: United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics as mentioned in the World Development Indicators (THE WORLD BANK, 2016).

7.2 VET Systems

7.2.1 VET population

The five countries that are part of the present research add up to 54% of all the VET students in the European Union in 2012: France 12%, Germany 14%, Italy 17%, Spain 6% and the United Kingdom 5% (see Table 67). There are more males VET students with a maximum of 62.1% in Germany and a minimum of 52.8% in the United Kingdom (see Table 69).

The population of the official age for upper secondary education in 2013 goes from 1,258,903 citizens in Spain to 3,034,726 in the United Kingdom (see Table 71).

The percentage of students in secondary education enrolled in vocational programmes was led in 2013 by Italy, 36%, followed by the United Kingdom, 32.1%, France, 18.8%, Germany 18.4% and Spain, 16.6%. In the United Kingdom there was a high increase in this value in 2013 and Germany lost steadily VET enrolment during the past years. France, Spain and Italy offer constant values during the last few years (see Table 72).

In 2012 there were in VET 155,285 teachers in Italy, 95,090 teachers in France, 78,940 in Germany and 39,056 in the United Kingdom. There are more male teachers in France and Germany and more female teachers in Italy and the United Kingdom. The database offers no information about Spain (see Table 68).

The salaries in USD of the secondary education teachers were in 2012 higher in Germany, 69,511.99 $, followed by Spain, 44,334.44 $, France 35,050.82 $ and Italy 33,989.14$. The database has no information about the teachers´ salaries in the United Kingdom (see Table 68).

The expenditure on upper secondary education as % of government expenditure on education was in Italy 25.8%, France 21.3%, Germany 17.9%, Spain 14.9% and the United Kingdom 14.8% (see Table 68).

TABLE 67 VET STUDENTS IN FRANCE, GERMANY, ITALY SPAIN & UK (2012)

	France	Germany	Italy	Spain	UK	EU
Percentage of the total EU students in secondary vocational education, both sexes (%)	12%	14%	17%	6%	5%	100%
Population of compulsory school age, both sexes (number)	8,467,318	9,196,889	6,712,991	4,375,454	7,888,049	n.a.
Population of the official age for post-secondary non-tertiary education, both sexes (number) (ES 2013, UK 2009)	1,493,273	2,703,391	583,055	1,283,201	822,392	8,807,646
Population of the official age for upper secondary education, both sexes (number)	2,249,564	2,479,739	2,837,099	860,127	3,129,048	19,031,484
Percentage of students in lower secondary education enrolled in vocational programmes, both sexes (%)	0.3%	2.5%	n.a.	0.5%	n.a.	2.3%
Percentage of students in lower secondary vocational education who are female (%)	24.9%	43.5%	n.a.	38.9%	n.a.	42.3%
Percentage of students in secondary education enrolled in vocational programmes, both sexes (%)	19.7%	18.9%	36.0%	17.7%	9.7%	24.1%
Percentage of students in secondary vocational education who are female (%)	43.0%	37.9%	39.5%	45.9%	47.2%	41.9%
Percentage of students in upper secondary education enrolled in vocational programmes, both sexes (%)	44.2%	48.3%	59.2%	45.5%	18.1%	47.6%
Percentage of students in upper secondary vocational education who are female (%)	43.2%	37.4%	39.5%	46.0%	47.2%	41.9%

	France	Germany	Italy	Spain	UK	EU
Enrolment in upper secondary vocational education, female (number)	499,365	477,566	651,255	263,291	222,229	3,894,252
Enrolment in upper secondary vocational education, both sexes (number)	1,156,634	1,277,985	1,646,970	572,226	470,403	9,304,375
Enrolment in secondary vocational education, both sexes (number)	1,166,089	1,396,380	1,646,970	583,036	470,403	9,793,303
Enrolment in secondary vocational education, female (number)	501,724	529,070	651,255	267,497	222,229	4,101,188
Enrolment in lower secondary vocational education, both sexes (number)	9,455	118,395	n.a.	10,810	n.a.	488,928
Enrolment in lower secondary vocational education, female (number)	2,359	51,504	n.a.	4,206	n.a.	206,936
Percentage of students in post-secondary non-tertiary education enrolled in vocational programmes, both sexes (%)	62.9%	n.a.	100.0%	n.a.	n.a.	n.a.
Percentage of students in post-secondary non-tertiary vocational education who are female (%)	72.8%	n.a.	57.3%	n.a.	n.a.	n.a.

Source: Education Statistics (The World Bank, 2016).

TABLE 68 VET TEACHERS AND EXPENDITURE IN FRANCE, GERMANY, ITALY, SPAIN & UK (2012)

	France	Germany	Italy	Spain	UK
Teachers in secondary vocational education, female (number) (2000)	31,380	31,189	82,577	n.a.	22,139
Teachers in secondary vocational education, both sexes (number) (2000)	95,090	78,940	155,285	n.a.	38,056
Annual statutory teacher salaries in public institutions in USD. Upper Secondary Education. 10 years of experience	35,050.82	69,511.99	33,989.14	44,334.44	n.a.
Expenditure on upper secondary education as % of government expenditure on education (%) (IT,ES,UK 2011)	21.3%	17.9%	25.8%	14.9%	14.8%

Source: Education Statistics (THE WORLD BANK, 2016).

FIGURE 79 PERCENTAGE OF STUDENTS IN SECONDARY VOCATIONAL EDUCATION BY SEXES (%) 2012

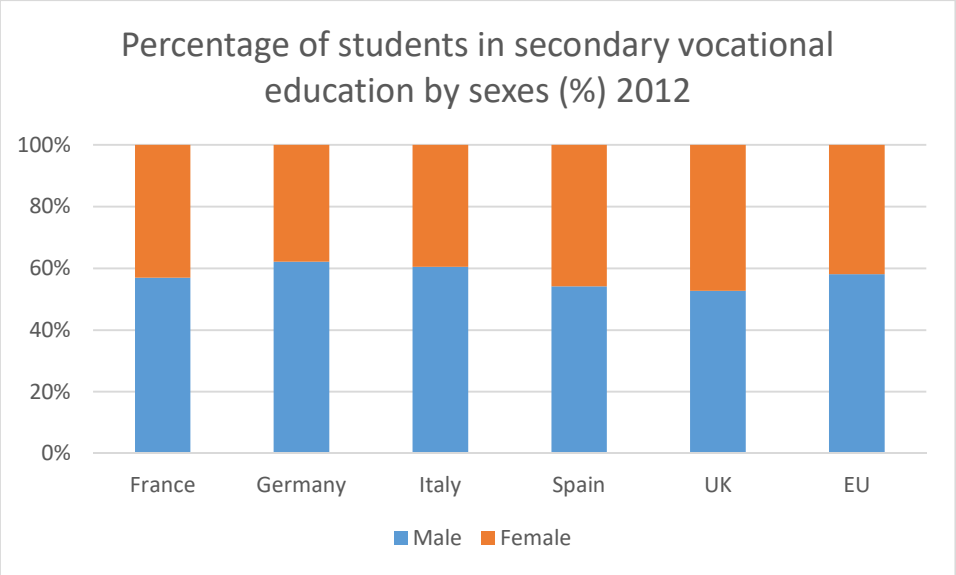


TABLE 69 PERCENTAGE OF STUDENTS IN SECONDARY VOCATIONAL EDUCATION BY SEXES (%) 2012

	France	Germany	Italy	Spain	UK	EU
Male	57.0%	62.1%	60.5%	54.1%	52.8%	58.1%
Female	43.0%	37.9%	39.5%	45.9%	47.2%	41.9%

Total number of students enrolled in vocational programmes at the secondary education level, expressed as a percentage of the total number of students enrolled in all programmes (vocational and general) at the secondary level. Vocational education is designed for learners to acquire the knowledge, skills and competencies specific to a particular occupation or trade or class of occupations or trades. Vocational education may have work-based components (e.g. apprenticeships). Successful completion of such programmes leads to labour-market relevant vocational qualifications acknowledged as occupationally-oriented by the relevant national authorities and/or the labour market. Number of female students enrolled in vocational programmes at the secondary education level expressed as a percentage of the total number of students (male and female) enrolled in vocational programmes at the secondary education level in a given school year.

Source: UNESCO Institute for Statistics as in Education Statistics (THE WORLD BANK, 2016).

FIGURE 80 POPULATION OF THE OFFICIAL AGE FOR UPPER SECONDARY EDUCATION, BOTH SEXES

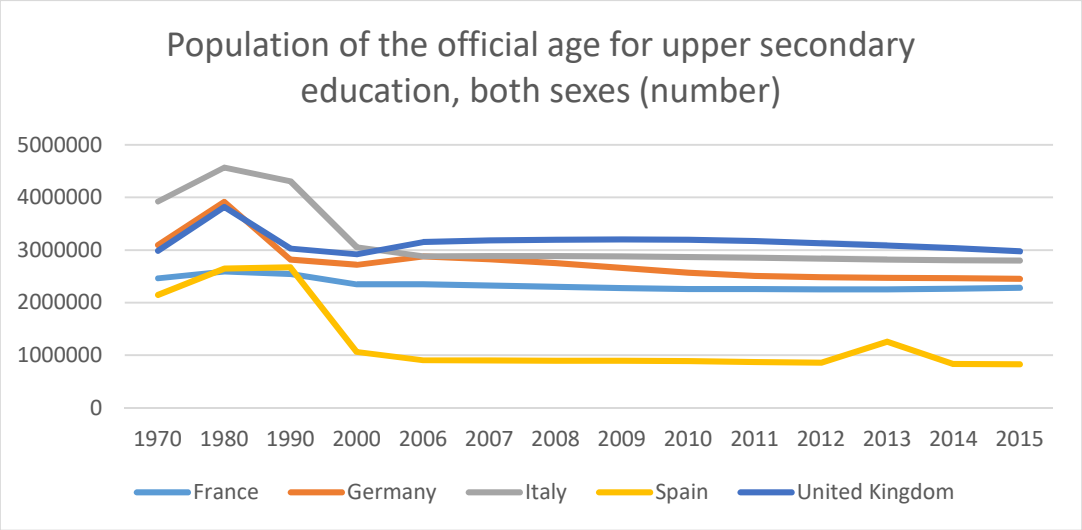


TABLE 70 POPULATION OF THE OFFICIAL AGE FOR UPPER SECONDARY EDUCATION, BOTH SEXES (NUMBER)

	France	Germany	Italy	Spain	UK	EU
1970	2,465,535	3,095,874	3,922,741	2,150,455	2,988,617	24,979,904
1980	2,591,127	3,916,247	4,569,023	2,644,958	3,824,065	26,580,556
1990	2,544,878	2,819,711	4,307,458	2,671,880	3,032,853	25,490,472
2000	2,346,482	2,722,950	3,055,682	1,066,288	2,918,478	21,850,608
2006	2,350,175	2,876,601	2,886,334	905,319	3,151,822	20,851,306
2007	2,325,686	2,826,351	2,885,289	899,638	3,179,918	20,655,572
2008	2,298,182	2,748,140	2,882,386	896,343	3,196,918	20,375,436
2009	2,274,301	2,656,678	2,876,024	892,892	3,201,399	20,035,220
2010	2,259,386	2,570,894	2,865,825	886,294	3,192,017	19,676,146
2011	2,257,825	2,505,567	2,852,424	872,304	3,169,488	19,307,488
2012	2,249,564	2,479,739	2,837,099	860,127	3,129,048	19,031,484
2013	2,252,936	2,471,904	2,819,969	1,258,903	3,084,660	19,165,404
2014	2,264,305	2,466,622	2,805,430	833,051	3,034,726	n.a.
2015	2,283,374	2,450,787	2,796,324	824,548	2,977,214	n.a.

Population of the age-group theoretically corresponding to upper secondary education as indicated by theoretical entrance age and duration.

Source: UNESCO Institute for Statistics as in Education Statistics (THE WORLD BANK, 2016).

FIGURE 81 PERCENTAGE OF STUDENTS IN SECONDARY EDUCATION ENROLLED IN VOCATIONAL PROGRAMMES, BOTH SEXES (%)

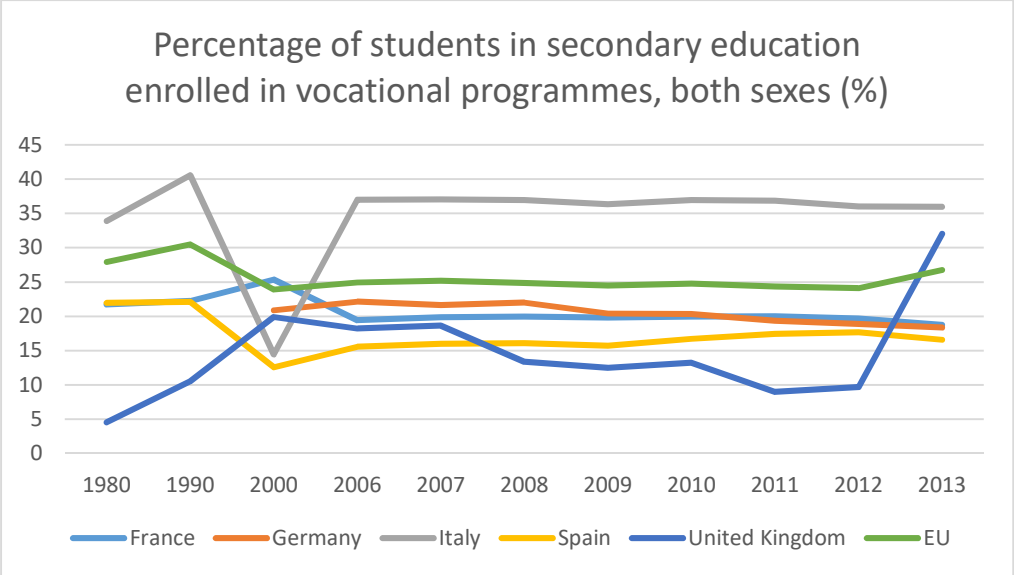


TABLE 71 PERCENTAGE OF STUDENTS IN SECONDARY EDUCATION ENROLLED IN VOCATIONAL PROGRAMMES, BOTH SEXES (%)

	France	Germany	Italy	Spain	UK	EU
1980	21.8	n.a.	33.9	22.0	4.5	27.9
1990	22.2	n.a.	40.6	22.1	10.5	30.5
2000	25.4	20.9	14.4	12.6	19.9	23.9
2006	19.4	22.2	37.0	15.6	18.2	24.9
2007	19.9	21.6	37.1	16.0	18.6	25.2
2008	20.0	22.0	36.9	16.1	13.4	24.8
2009	19.8	20.4	36.3	15.7	12.5	24.5
2010	20.0	20.3	36.9	16.7	13.2	24.8
2011	20.0	19.4	36.8	17.5	9.0	24.4
2012	19.7	18.9	36.0	17.7	9.7	24.1
2013	18.8	18.4	36.0	16.6	32.1	26.8

Total number of students enrolled in vocational programmes at the secondary education level, expressed as a percentage of the total number of students enrolled in all programmes (vocational and general) at the secondary level. Vocational education is designed for learners to acquire the knowledge, skills and competencies specific to a particular occupation or trade or class of occupations or trades. Vocational education may have work-based components (e.g. apprenticeships). Successful completion of such programmes leads to labour-market relevant vocational qualifications acknowledged as occupationally-oriented by the relevant national authorities and/or the labour market.

Source: UNESCO Institute for Statistics as in Education Statistics (THE WORLD BANK, 2016).

FIGURE 82 PERCENTAGE OF STUDENTS IN UPPER SECONDARY EDUCATION ENROLLED IN VOCATIONAL PROGRAMMES, BOTH SEXES (%)

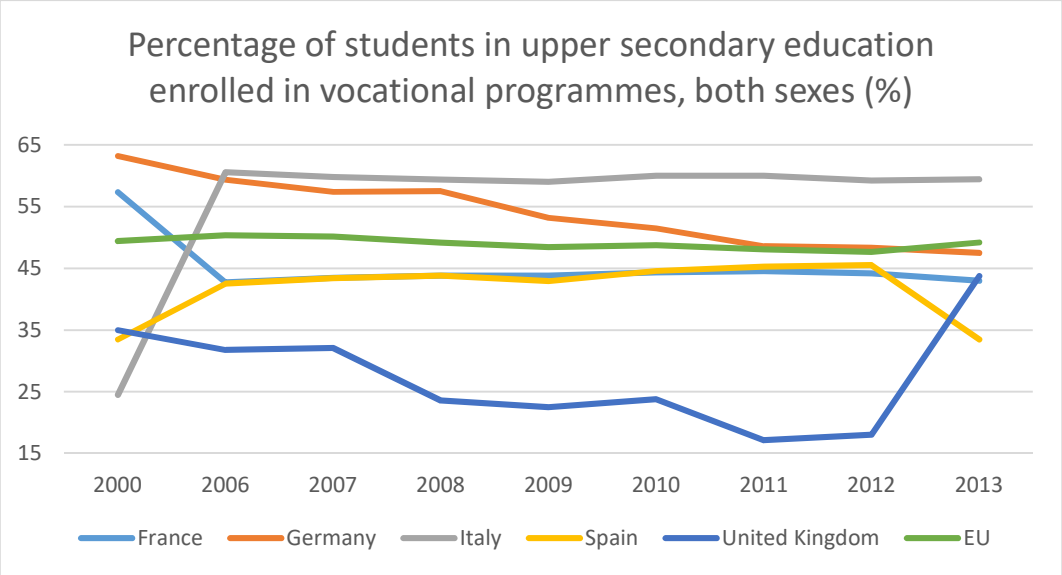


TABLE 72 PERCENTAGE OF STUDENTS IN UPPER SECONDARY EDUCATION ENROLLED IN VOCATIONAL PROGRAMMES, BOTH SEXES (%)

	France	Germany	Italy	Spain	UK	EU
2000	57.4	63.2	24.6	33.5	35.0	49.4
2006	42.7	59.4	60.5	42.5	31.8	50.3
2007	43.4	57.4	59.8	43.4	32.1	50.2
2008	43.8	57.5	59.4	43.8	23.6	49.2
2009	43.8	53.2	59.0	42.9	22.5	48.4
2010	44.3	51.5	60.0	44.6	23.8	48.7
2011	44.6	48.6	60.0	45.3	17.2	48.0
2012	44.2	48.3	59.2	45.5	18.1	47.6
2013	43.0	47.5	59.4	33.5	43.8	49.2

Total number of students enrolled in vocational programmes at the upper secondary education level, expressed as a percentage of the total number of students enrolled in all programmes (vocational and general) at the upper secondary level. Vocational education is designed for learners to acquire the knowledge, skills and competencies specific to a particular occupation or trade or class of occupations or trades. Vocational education may have work-based components (e.g. apprenticeships). Successful completion of such programmes leads to labour-market relevant vocational qualifications acknowledged as occupationally-oriented by the relevant national authorities and/or the labour market.

Source: UNESCO Institute for Statistics as in Education Statistics (THE WORLD BANK, 2016).

FIGURE 83 ENROLMENT IN SECONDARY VOCATIONAL EDUCATION, BOTH SEXES (NUMBER)

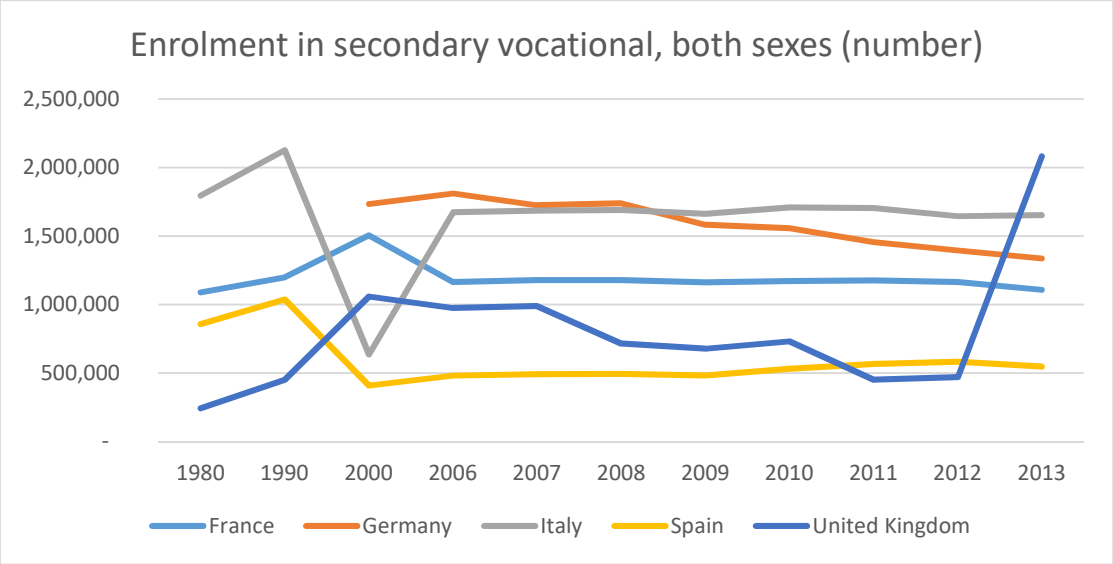


TABLE 73 ENROLMENT IN SECONDARY VOCATIONAL EDUCATION, BOTH SEXES (NUMBER)

	France	Germany	Italy	Spain	UK	EU
1980	1,089,439	n.a.	1,797,109	858,993	243,743	13,063,531
1990	1,200,424	n.a.	2,128,127	1,037,984	451,000	13,789,240
2000	1,505,783	1,735,846	636,068	409,189	1,058,893	10,823,726
2006	1,164,584	1,812,986	1,675,559	482,220	975,942	10,867,814
2007	1,179,584	1,726,660	1,687,419	492,411	988,987	10,818,025
2008	1,178,600	1,741,243	1,690,483	494,411	717,002	10,585,723
2009	1,161,838	1,582,678	1,662,566	482,102	679,883	10,317,601
2010	1,173,133	1,557,160	1,708,779	532,582	732,919	10,431,336
2011	1,177,758	1,457,886	1,705,403	566,815	451,007	10,038,252
2012	1,166,089	1,396,380	1,646,970	583,036	470,403	9,793,303
2013	1,109,601	1,338,507	1,652,547	547,099	2,083,049	11,544,648

Total number of students enrolled in vocational programmes at public and private secondary education institutions. Vocational education is designed for learners to acquire the knowledge, skills and competencies specific to a particular occupation or trade or class of occupations or trades. Vocational education may have work-based components (e.g. apprenticeships). Successful completion of such programmes leads to labour-market relevant vocational qualifications acknowledged as occupationally-oriented by the relevant national authorities and/or the labour market.

Source: UNESCO Institute for Statistics as in Education Statistics (THE WORLD BANK, 2016)

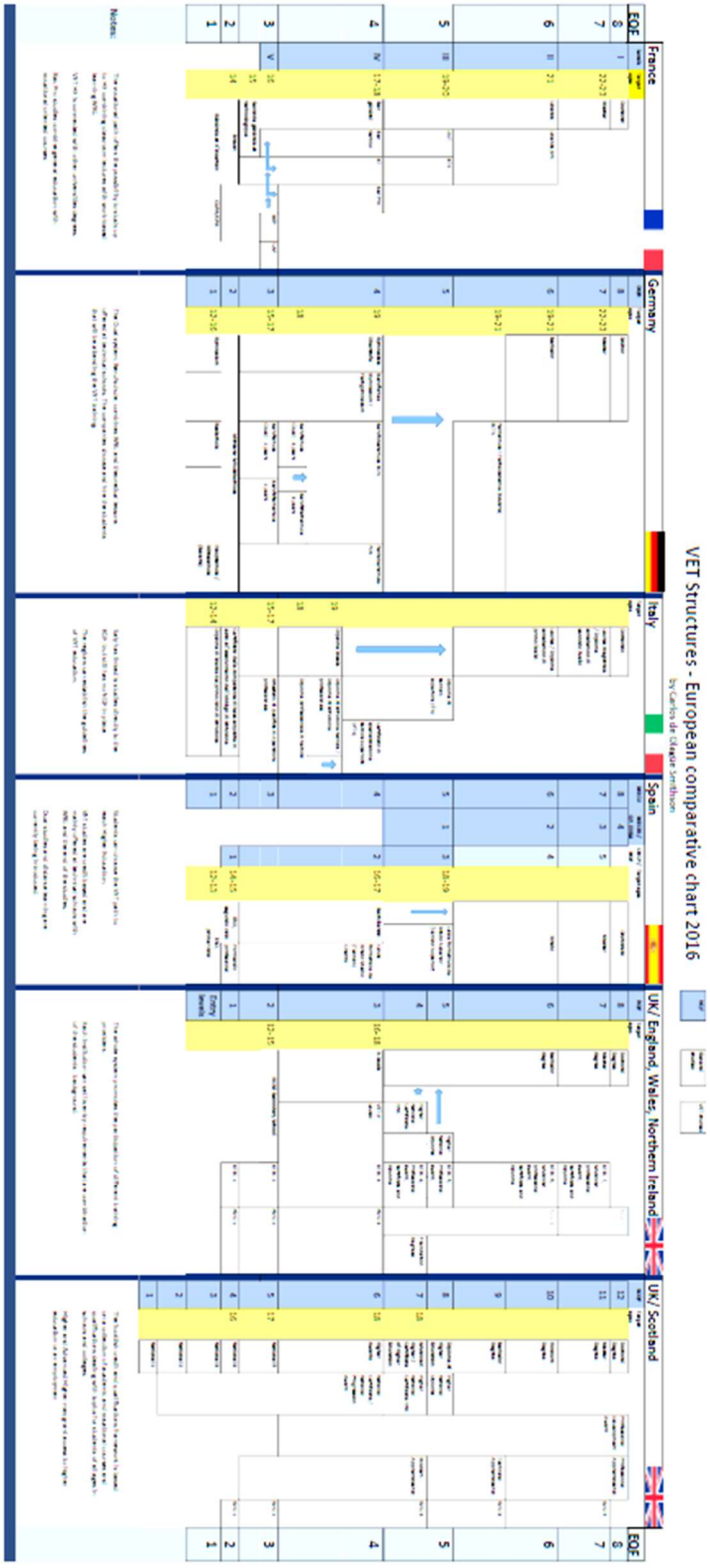
7.2.1 VET structures

The next page illustrates the VET studies of France, Germany, Italy, Spain and the United Kingdom in a table matching the European Qualifications Framework levels. This table is meant to be a tool to find similar studies across the different countries.

In France, some of the uppersecondary VET include general education courses. In Germany, the dual system is not the only VET path. In Italy, students have the possibility to choose between the *Istituti* and the *IeFP* courses. In Spain, the uppersecondary VET is commonly offered at schools that also offer general secondary education. In the United Kingdom the VET is not really differentiated from the general education and students can combine different types of courses in their curriculum.

In the case of Higher Education, France offers VET studies at universities – DUT, as well as at High Schools, BTS. Germany offers only a few HE VET alternatives for the students that follow the VET path. In Italy and Spain there are HE studies that build up on previous uppersecondary VET studies. In the United Kingdom the HE VET studies are offered by different training providers and at universities and there is no difference between HE general and vocational studies.

TABLE 74 VET STRUCTURES - EUROPEAN COMPARATIVE CHART 2016



7.2.2 Upper Secondary VET

To enter upper secondary Vocational Education and Training each country has different admission requirements (see Table 76):

- *In France, there are no examinations to access public upper secondary education (général or professionnel), as the first year of lycée is part of the compulsory education curriculum.*
- *In Germany, the students generally need to have a Hauptschulabschluss or a Mittlerer Schulabschluss. In Italy, the students need to be in possession of a first-cycle leaving certificate.*
- *The students in Spain usually access the VETstudies after receiving the Título de Graduado en Educación Secundaria Obligatoria, provided they have passed the final evaluation of compulsory secondary education.*
- *In England, Wales and Northern Ireland Students' results in GCSE examinations are influential in determining their progression to further education.*
- *In Scotland schools may set entrance standards for certain courses and advise pupils which level of the National Qualifications framework is the most appropriate for them.*

Each of the VET systems is different and the picture of the studies is quite heterogeneous (see Table 76):

- *Students in France can attend a college (lycées professionnels, a professional education section located in a lycée d'enseignement general et technologique or in a lycée polyvalent) or choose an apprenticeship combining training at a company and attendance at an apprentice training centre (Centre de Formation d'Apprentis – CFA).*
- *In Germany, the dual system combines training at a company and attendance to a Berufsschule. The Berufsfachschulen are full-time schools that offer vocational training*

and the Fachoberschule is an institution that offers a combination of professional skills and general knowledge.

- *The students in Italy can choose two main paths: On the one hand they can attend Istituti tecnici, to learn technical and administrative jobs or the Istituti professionali where they acquire industrial skills. On the other hand, they can sign up at the courses Istruzione e formazione professionale, IeFP, offered by the regions*
- *The Formación Profesional de Grado Medio can be offered at specialised VET institutions or at schools that also offer general education like Educación Secundaria Obligatoria - ESO and Bachillerato*
- *In England, Wales and Northern Ireland VET is offered at further education colleges and in the 'sixth form' of some secondary schools. In Scotland a student can take courses at different levels in the first year of the senior phase of Curriculum for Excellence.*

After finishing their VET studies the students receive a certificate that reflects the attainment of a qualification at level 4 in the EQF (see Table 77). In France, the students can get the *baccalauréat professionnel* and the intermediary diplomas *BEP* or *CAP*. In Germany, the students can apply, depending on their studies, to the *Fachhochschulreife*, the *Fachgebundene Hochschulreife*, and the *Allgemeine Hochschulreife.* Students who pass the final State examination at technical and vocational institutes in Italy, receive the *Diploma di istruzione tecnica* and the *Diploma di istruzione professionale*. In Spain the student receives the diploma *Técnico*. The Technical level qualifications, the Applied General qualifications, together with the A levels are the qualifications recognised at schools and colleges of England, Wales and Northern Ireland. In Scotland, the National Qualifications can be achieved at different levels.

TABLE 75 UPPER SECONDARY VET ADMISSION REQUIREMENTS

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
There are no examinations to access public upper secondary education (général or professionnel), as the first year of *lycée* is part of the compulsory education curriculum. In the case of an enrolment in a private *lycée* "under contract", or enrolment in a *Centre de Formation d'Apprentis, CFA* (apprentice training centre), the enrolment is carried out by the parents directly with the chosen institution, in the orientation path decided at the end of *collège*.	Depending on the training objective, *Berufsfachschulen* require their pupils to have a *Hauptschulabschluss* or a *Mittlerer Schulabschluss*. *Fachoberschule* and *Berufliches Gymnasium* require a *Mittlerer Schulabschluss*. The *Berufsoberschule* requires the *Mittlerer Schulabschluss* or qualifications recognised as equivalent and at least two years' successful vocational training or at least five years' of relevant practical experience. There are no formal prerequisites for admission to the dual system.	Students who have successfully completed the first cycle of education must enrol in State-run upper secondary schools (general and vocational) or in the vocational training courses (IFP) organised by the Regions. Possession of a first-cycle leaving certificate is the only admission requirement for vocational upper secondary education.	Finishing one of the following: - Título de *Graduado en Educación Secundaria Obligatoria*, provided they have passed the final evaluation of compulsory secondary education. - *Título Profesional Básico.* - *Título de Bachiller* - *Título de Técnico* or *Técnico Superior de Formación Profesional.* - all the subjects of *Bachillerato*. - a specific exam	Students' results in GCSE examinations are influential in determining their progression to further education and the particular pathway chosen. For pupils who are not entered for such examinations or for an Entry Level qualification, achievement is measured by teacher assessment at the end of the key stage 4.	There are no restrictions on pupils staying on at school beyond the age of 16 into upper secondary education, although schools may set entrance standards for certain courses and normally advise pupils which level of the National Qualifications framework is the most appropriate for them.

Source: Compiled by the author with Eurydice data (EUROPEAN COMMISSION, 2016).

TABLE 76 UPPER SECONDARY VET DESCRIPTION

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
Two possibilities: - student in *lycées professionnels* that depend on the Department for Education, in the agricultural *lycées professionnels* that depend on the Department of Agriculture, in a professional education section located in a *lycée d'enseignement general et technologique* or in a *polyvalent*, versatile one; - apprentice, linked to the company via a labour contract. Trained by alternating between the company (in which they spend 60 to 75% of their time) and an apprentice training centre (*Centre de Formation d'Apprentis – CFA*).	*Berufsfachschulen* are full-time schools that offer vocational training in one or several *anerkannte Ausbildungsberufe* (recognised occupations requiring formal training). At the *Fachoberschule* the subjects include German, foreign language, mathematics, natural sciences, economics and society and also a field-specific subject. The *Berufliches Gymnasium* includes career-oriented specialisations. In the dual system, the trainees spend three or four days a week at the company and up to two days at the *Berufsschule*.	At *Istituti tecnici*, students can learn technical and administrative jobs. At the *Istituti professionali* they acquire industrial skills. These studies combine, during five years, general education and the learning of vocational skills. Once achieved, students can continue to higher education. The *Istruzione e formazione professionale, IeFP* are studies offered by the regions	*Formación Profesional de Grado Medio* is offered at institutions exclusively devoted to teaching this type of provision, integrated and national reference intitutions, or in institutions which also offer other types of education. The most frequent case is that it is offered along with *Educación Secundaria Obligatoria, ESO* and *Bachillerato* in public secondary schools.	Vocational education and training available to post-compulsory age students includes: - vocational qualifications programmes typically delivered in further education colleges but also available in the 'sixth form' of some secondary schools - apprenticeships including pre-apprenticeship programmes such as 'Traineeships'.	Learners will take qualifications at a level appropriate to previous attainment. This may mean that a learner takes courses at different levels in S4, the first year of the senior phase of Curriculum for Excellence. Under the new National Qualifications system, the number of subjects learners should be examined for in S4 is not being set out nationally.

Source: Compiled by the author with Eurydice data (EUROPEAN COMMISSION, 2016).

TABLE 77 UPPER SECONDARY VET CERTIFICATION

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
Students can follow: - a three-year programme (second, first and ending class) leading to the *baccalauréat professionnel*. The three-year programme incorporates preparation for an intermediate diploma (*BEP* or *CAP*). Taking this diploma is required of all school pupils, but not for apprentices who can decide whether or not to take this diploma; - a two-year programme, which prepares for the *certificat d'aptitude professionnelle, CAP* - a four-year programme (2 + 2), for pupils who have earned a *CAP* and who want to prepare a baccalauréat professionnel. They can, in this case, join a *première professionnelle* class.	Under certain conditions, the *Fachhochschulreife* (higher education entrance qualification for the *Fachhochschule*) may be acquired at the *Berufsfachschule*. At the *Fachoberschule* and the *Berufsoberschule* the students can achieve the *Fachgebundene Hochschulreife* and, with sufficient competence in a second foreign language, the *Allgemeine Hochschulreife* (a general entrance qualification for higher education). The *Berufliches Gymnasium* leads to the *Allgemeine Hochschulreife*. The *Berufsoberschule* enables graduates from the *duales System* to obtain a higher education entrance qualification.	Students who pass the final State examination at technical and vocational institutes, receive a technical education diploma (*Diploma di istruzione tecnica*) and a vocational education diploma (*Diploma di istruzione professionale*) respectively, and a certificate. In addition to the student's personal details, the Diploma shows the technical or vocational institute and the branch of specialisation attended and the mark score obtained in the final examination.	The diploma *Técnico* grants access to the studies *Ciclos de Grado Superior.*	Qualifications are categorised into one of two groups: - Technical level qualifications (tech levels) are for 16-year-old students who have a clear idea about the occupation they wish to pursue. Such as engineering, computing, accounting or hospitality. - Applied General qualifications are for 16-year-old students who wish to continue their education by learning about a vocational area rather than a single occupation, for example applied science, business or sport. These, alongside A levels, are the only level 3 qualifications which will be recognised in the school and college performance tables for 16-19 year olds.	National Qualifications cover a large number of subjects and can be achieved at different levels at schools and colleges.

Source: Compiled by the author with Eurydice data (EUROPEAN COMMISSION, 2016).

7.2.3 Higher Education VET

To enter Higher Education VET every country has different admission requirements (see Table 78): In France, the HE institution demands not only the *baccalauréat*, but can also interview the candidate and/or ask for extra details. In Germany the students need to hold a higher education entrance qualification. In Spain, the students need to have a *Bachillerato* certificate, a *Técnico de Grado Medio* diploma or pass a specific exam. In England, Wales and Northern Ireland each HE institution can determine their own entry requirements. In Scotland the students need a qualification at GSVQ level III, a programme of national Units appropriate to the specific course, two passes at Scottish certificate of Education Higher level or above or an equivalent to these.

There are a variety of VET studies and certificates the students can achieve at Higher Education level (see Table 79 and Table 80). In France, they can receive the *diplôme universitaire de technologie - DUT*, the *brevet de technicien supérieur – BTS* and the *diplôme d'études universitaires scientifiques et techniques - DEUST*. The *Berufsakademien* and the *Fachschule/Fachakademie* are the HE VET institutions in Germany. In Italy the HE VET students can apply for the *Diploma di tecnico superior* and *Técnico Superior* is the Spanish certificate. In England, Wales and Northern Ireland the students can receive a Higher National Certificate - HNC, a Higher National Diploma - HND, a Foundation Degree, BTECs at levels 4 to 7 and NVQs at levels 4 and 5. In Scotland there is also the HNC, the HND as well as Professional development awards and SVQs at levels 3 to 5.

TABLE 78 HE VET ADMISSION REQUIREMENTS

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
Admission mainly depends on the institutions and the diplomas prepared. Nevertheless, all institutions demand that the applicants hold the *baccalauréat* or an officially accepted equivalent or dispensation. For instance, access to *instituts universitaires de technologie, IUT* is selective, based on an application dossier and interview with *baccalauréat* holders. The law on higher education (*ESR*) gives priority access to *STS* to vocational baccalaureate graduates and priority access to *IUT* to technological baccalaureate graduates.	Completion of the upper level of secondary education and a higher education entrance qualification	An upper secondary education qualification	One of the following: - To hold a *Bachillerato* certificate. - To have a *Técnico de Grado Medio* diploma. - To have passed an entrance examination to *Formación Profesional de Grado Superior* or a university entrance examination for students over 25. - To hold a university degree or equivalent.	There are no set entry requirements for short cycle programmes; it is for individual higher education institutions (HEIs) to determine their requirements. Relevant work experience may be considered alongside or instead of formal qualifications.	One of the following: - A qualification at GSVQ level III - A programme of national Units appropriate to the specific course - Two passes at Scottish certificate of Education Higher level or above - An equivalent qualification.

Source: Compiled by the author with Eurydice data (EUROPEAN COMMISSION, 2016).

TABLE 79 HE VET DESCRIPTION

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
The VET two-year courses, corresponding to a first cycle level, mainly concern the industrial, service and paramedical sectors: - *Diplôme universitaire de technologie, DUT* prepared in *instituts universitaires de technologie, IUT*. - *Brevet de technicien supérieur, BTS* prepared in advanced technician sections (*STS*) of the *lycées* - *Diplôme d'études universitaires scientifiques et techniques, DEUST*. This diploma will be phased out with the introduction of the new university diploma structure, *LMD*. Another course is the *Licence professionnelle*, prepared in two semesters after the *DUT*, *BTS* or during 2 years of general *licence*, like a bachelor degree.	Some *Länder* have *Berufsakademien*, which offer an alternative to higher education in the form of courses qualifying to practise a profession. The *Fachschulen* and the *Fachakademien* in Bavaria are also part of the tertiary sector. Training at *Berufsakademien* is governed by the *Berufsakademie* laws in force in the individual *Länder* and by the *Ausbildungsordnungen* (training regulations) and *Prüfungsordnungen* (examination regulations) of the relevant Ministry of Science or the *Berufsakademie* itself. Continuing vocational education at *Fachschulen* is regulated by education legislation and by the training regulations and examination regulations of the individual *Länder* in particular.	Courses at *Istituti Tecnici Superiori - ITS* last between 4 and 6 semesters and are organised in modules. Curricula includes general basic competences (languages, communications and public relations, science and technology, law and economics, organisation and management), common to all technological areas, technical competences, common to all professional qualifications of each technological area and competences specific of each professional qualification. Courses include theoretical lessons and labs; 30% of the time should be assigned to on-the-job training.	The different vocational modules which integrate *Ciclos Formativos de Grado Superior* are the following: - Modules associated to competence units from the *Catálogo Nacional de Cualificaciones Profesionales*. - A module devoted to professional training and guidance. - A module on business skills and entrepreneurship. - A work placement module (*FCT*). - A project module. - Additional modules, not directly linked to competence units.	Higher education in the UK does not distinguish between vocational and academic studies. Universities and other higher education institutions offer Bachelor, Master and Doctoral degrees and also offer iVET focused courses, like the two-year higher national certificates and diplomas (HNCs and HNDs) and foundation degrees (FD)	Courses offered by colleges, other training centres and some universities lead to Higher National Certificates and Higher National Diplomas (HNC and HND). All HNs have been benchmarked against the SCQF levels and allocated SCQF credit points. HNCs are a 1-year course. HNDs are 2-years after the HNC. As in other areas of higher education work, universities and other institutions are autonomously responsible for certifying their Higher Education Diploma programmes.

Source: Compiled by the author with Eurydice data (EUROPEAN COMMISSION, 2016).

TABLE 80 HE VET CERTIFICATION

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
Short higher education leads to the following national diplomas: - *diplôme universitaire de technologie, DUT* (technological university diploma); - *brevet de technicien supérieur, BTS* (advanced technician diploma); - *diplôme d'études universitaires scientifiques et techniques, DEUST* (university and technical studies diploma).	In some *Länder*, students can attend the *Berufsakademien* and the *Fachschule*, called *Fachakademie* in Bavaria.	Students receive the *Diploma di tecnico superiore*. The certificate should indicate the technological area and the relevant national qualification. The Diploma gives access to public competitions and to university courses with the recognition of credits obtained into *CFU*, as well as to the labour market.	Students receive the diploma of *Técnico Superior* in the corresponding area of specialisation. This diploma provides accreditation of the competences included in the relevant professional profile, together with working, social and personal competences, as well as with professional qualifications and competence units. The diploma has official, academic and professional validity nationwide. This diploma provides direct access to university Bachelor programmes.	Students can receive the following: - Higher National Certificate, HNC - Higher National Diploma, HND - Foundation Degree - BTEC at levels 4 to 7 - NVQ at levels 4 and 5	The Scottish Qualifications Authority (SQA) formally certifies achievement of the Higher National Courses (HNC and HND) and the individual Higher National Units making up these courses. There are also: - Professional development awards - Modern Apprenticeship SVQ 3 - Technical Apprenticeship SVQ 3 and 4 - Professional Apprenticeship SVQ 5

Source: Compiled by the author with Eurydice data (EUROPEAN COMMISSION, 2016).

7.3 European Frameworks

7.3.1 The EQF and NQFs qualifications frameworks

The information described in this section is detailed in Table 81, Table 82 and Table 83.

France referenced in 2010 the EQF framework using the original five-level structure from 1969 as a guideline. The *Commission Nationale de la Certification Professionnelle – CNCP*, founded 2002, is the EQF National Coordination Point and establishes with the *Répertoire national des certifications professionnelles - RNCP* the French NQF .

The German NQF, *Deutscher Qualifikationsrahmen-DQR* has eight levels that match the EQF. The *DQR* came into force on 1 May 2013. The *Bund-Länder-Koordinierungsstelle - B-L-KS DQR*, is the NCP.

At this moment, the Italian NQF levels and their descriptors have not been defined as a whole so they have decided to reference all the national qualifications directly to the eight EQF levels instead of waiting to have their NQF ready. The *Istituto per lo sviluppo della formazione professionale dei lavoratori - ISFOL* is the NCP.

In Spain, the *Marco Español de Cualificaciones* has eight levels matching the EQF levels and combines the *Catálogo Nacional de Cualificaciones Profesionales – CNCP* and the *Marco Español de Cualificaciones para la Educación Superior – MECE*S (QF- EHEA). The *Dirección General de la Formación Profesional* is the NCP.

The NCP in England is Ofqual, in Northern Ireland, CCEA Regulation and in Wales, CollegesWales. The QCF was referenced to the EQF in 2009 and the FHEQ, higher education, to the EHEA-framework in 2008. The Scottish qualifications framework - SCQF was referenced to the EQF in February 2010 as a part of the overall UK referencing process and the Scottish Credit & Qualifications Framework Partnership is the NCP.

TABLE 81 THE EUROPEAN QUALIFICATIONS FRAMEWORK – EQF IN FRANCE, GERMANY, ITALY, SPAIN AND THE UNITED KINGDOM

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
In 2010, the EQF framework was referenced using the original five-level structure as a guideline. The existing five-level structure dates back to 1969. Since 2009, different stakeholders consider an eight-level structure would align better with the EQF, but the future is still unclear. Defining qualifications at EQF levels 1 and 2 is seen as a threat to the working conditions of the less qualified workers.	In December 2012, the Arbeitskreis DQR presented the report referencing EQF and the DQR. The DQR has eight levels that match the EQF. The DQR came into force on 1 May 2013.	The future of the NQF is still pending a political commitment. Italy has decided to reference all the national qualifications directly to the eight EQF levels instead of waiting to have their NQF ready. The Italian qualifications framework for higher education is already in place.	The *Marco Español de Cualificaciones* has eight levels matching the EQF levels	The QCF was referenced to the EQF in 2009 and the FHEQ, higher education, to the EHEA-framework in 2008. There is currently no official relation between these two frameworks but links can be established by comparison.	The SCQF was referenced to the EQF in February 2010 as a part of the overall UK referencing process.

Source: Compiled by the author with the information described and referenced in Chapter 6.

TABLE 82 THE NATIONAL QUALIFICATIONS FRAMEWORKS – NQF IN FRANCE, GERMANY, ITALY, SPAIN AND THE UNITED KINGDOM

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
The *CNCP* and the *Répertoire national des certifications professionnelles - RNCP* establishes the French NQF. It supports non-formal and informal learning (*validation des acquis de l'experience, VAE*) and focuses on vocationally or professionally oriented qualifications.	The German NQF - *Deutscher Qualifikationsrahmen DQR* started in 2006 with the collaboration of the *Bundesministerium für Bildung und Forschung – BMBF* and the *Kultusministerkonferenz - KMK*. The *Arbeitskreis DQR* (DQR workgroup) includes stakeholders from higher education, school education, VET, social partners, public institutions from education and the labour market. The decisions are based on consensus.	At this moment, the Italian NQF levels and their descriptors have not been defined as a whole. Some parts like the qualifications framework at upper secondary level and those for higher education are already in place. The EQF level descriptors and the learning outcomes are the guidelines for the next steps of the Italian NQF development.	The *Marco Español de Cualificaciones – MECU* (Spanish NQF) combines the *Catálogo Nacional de Cualificaciones Profesionales – CNCP* (National catalogue of professional qualifications) and the *Marco Español de Cualificaciones para la Educación Superior – MECES* (QF-EHEA).	The QCF mainly addresses vocational and pre-vocational education and training areas but does not include secondary education (school leaving certificates) and higher education.	The Scottish qualifications framework - SCQF has been gradually revised since it was originally implemented in 2001. The SCQF has 12 levels ranging from access at SCQF level 1, up to Doctorate at level 12.

Source: Compiled by the author with the information described and referenced in Chapter 6.

TABLE 83 THE EQF NATIONAL COORDINATION POINTS - NCP IN FRANCE, GERMANY, ITALY, SPAIN AND THE UNITED KINGDOM

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
Commission Nationale de la Certification Professionnelle – CNCP, founded 2002. It cooperates with the Ministries, social partners and other relevant stakeholders like the chambers of commerce.	The *Bund-Länder-Koordinierungsstelle - B-L-KS DQR*, (Federal government/Regions coordination point) assumes the functions of the EQF NCP.	*Istituto per lo sviluppo della formazione professionale dei lavoratori - ISFOL* (National Institute for the Development of Vocational Training)	*Dirección General de la Formación Profesional* (Directorate for Vocational Training) of the Ministry of Education.	England and Northern Ireland: Ofqual and CCEA Regulation Wales: CollegesWales	Scottish Credit & Qualifications Framework Partnership

Source: Compiled by the author with the information described and referenced in Chapter 6.

7.3.2 Credits in VET

The information described in this section is detailed in Table 84, Table 85 and Table 86.

The situation of the credit frameworks in the five target countries is very similar. ECVET is still under development and the ECTS is quite widespread at Higher Education level.

In France, it is difficult to develop ECVET because the structure of upper secondary VET qualifications at EQF levels 3 and 4 are diverse and are offered by different stakeholders. ECTS are offered at HE VET studies like DUT and BTS.

In only 25 of approximately 350 German upper secondary VET studies, modules can be found, this makes the development of ECVET difficult. At the HE VET *Berufsakademien* and *Fachschulen* ECTS can be found.

In Italy ECVET is seen as an opportunity to foster a more homogeneous national qualifications system based on learning outcomes. ECTS is used by the universities, but it is still not widespread among the *Istituti tecnici superiori*.

The upper secondary VET studies *Formación Profesional de Grado Medio* in Spain still do not use ECVET, but ECTS is already recognised in the HE VET *Formación Profesional de Grado Superior.*

In England, Wales and Northern Ireland, the unit-based structure of qualifications at upper secondary VET and their alignment to qualifications and credit frameworks open up the possibility of credit transfer between qualifications. However, the transfer arrangements are made at the discretion of the admitting institution. In Scotland credit points are a way of showing how much time it takes, on average, to complete a qualification or learning programme. ECTS is used in the HE institutions of the whole United Kingdom with a conversion ratio of one ECTS representing two UK credits.

TABLE 84 CREDITS IN VET IN FRANCE, GERMANY, ITALY, SPAIN AND THE UNITED KINGDOM

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
A legal framework that includes a list of individual certification units describes each of the qualifications provided by the *Ministère de l'Éducation nationale de l'Enseignement supérieur et de la Recherche.* Although these certification units might seem to be independent modules, they are not certified independently and they have to be all achieved to receive the final qualification. The students have to work focusing on receiving the full state-recognised award and cannot combine different units nor change the learning order.	Certification and assessment follow the German *Berufskonzept*; skill units are assessed as part of the whole qualification and cannot be certified independently. Only the final qualification is recognised by an official award. The chambers of commerce or the federal authorities recognise this final award. There is no common framework or standardised procedure for the validation of non-formal and informal learning; it depends on the different institutions from the various sectors and requires an examination by an authorised organisation.	During the past decade, Italy is undergoing a broad reform of its VET system. 21 different regional authorities have historically certified different qualifications and the new national framework is starting to facilitate the recognition of the regional VET studies across the nation.	The *Catálogo Nacional de Cualificaciones Profesionales - CNCP* is the reference point used for VET. These qualifications are assigned to credit units and are based on modules, linked to the *CNCP*. The modules are separately assessed and certified taking into account the learning outcomes and can be the fragments of an iVET diploma and/or cVET certificate.	QCF covers the same number of levels as the NQF (number of levels, coverage) but differs in using units rather than qualifications as the primary currency, and all units would carry a credit rating based (as in higher education) on one credit equalling 10 notional hours of learning. One RQF credit has the same value as one EWNI/QCF credit.	Credit points are a way of showing how much time it takes, on average, to complete a qualification or learning programme. Along with the Level Descriptors, they allow learners, learning providers and employers to compare different qualifications at the same or even different levels.

Source: Compiled by the author with the information described and referenced in Chapter 6.

TABLE 85 ECVET CREDITS IN BASIC AND INTERMEDIATE VET IN FRANCE, GERMANY, ITALY, SPAIN AND THE UNITED KINGDOM

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
Development of ECVET in France is still underway. The structure of VET qualifications at EQF levels 3 and 4 are diverse and are offered by different stakeholders: ministries, chambers of commerce, sectors, and private providers. The *Ministère de l'Éducation nationale de l'Enseignement supérieur et de la Recherche* is responsible for the largest amount of these qualifications.	The development of ECVET in Germany is still underway. Most of the VET studies in Germany follow the apprenticeship/dual system model. In only 25 of approximately 350 German VET studies, modules can be found. These modules are *Wahlqualificationen* (electives) so the student can specialise in his profession. The rest of the curricula is mostly input-oriented.	Development of ECVET in Italy is still underway. ECVET is seen as an opportunity to foster a more homogeneous national qualifications system based on learning outcomes.	The development of ECVET for *Formación Profesional de Grado Medio*, is still underway.	The unit-based structure of qualifications and their alignment to qualifications and credit frameworks open up the possibility of credit transfer between qualifications in line with recognition of prior learning guidelines. It is hoped that credit transfer will occur more frequently in the future. However, admission and transfer arrangements are made at the discretion of the admitting institution.	In common with other credit systems, the SCQF works on the basis that one credit point represents the amount of learning achieved through a notional 10 hours of learning time which includes everything a learner has to do to achieve the outcomes in a qualification including the assessment procedures.

Source: Compiled by the author with the information described and referenced in Chapter 6.

TABLE 86 ECTS CREDITS IN HIGHER VET IN FRANCE, GERMANY, ITALY, SPAIN AND THE UNITED KINGDOM

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
The ECTS credit system is already being used in the French Higher Education studies, including the VET studies at EQF level 5: • *Brevet de technicien supérieur BTS* • *Diplome Universitaire de Technologie DUT*	The ECTS credit system is already being used in the German Higher Education studies, including the VET studies at EQF level 5: • *Berufsakademie* • *Fachschule*	The ECTS credit system is already being used in the Italian Higher Education studies, using it at universities with the equivalence 1 CFU = 1 ECTS. Overall recognition of ECTS credits in the VET studies at EQF level 5, for example at the *Istituti tecnici superiori* / EQF 5, is not widespread and done mainly on a one-to-one basis.	The ECTS credit system is already being used in the Spanish Higher Education studies, including the HE VET studies at EQF level 5, namely the *Formación Profesional de Grado Superior.*	Two UK Credits equals one ECTS Credit	Two UK Credits equals one ECTS Credit

Source: Compiled by the author with the information described and referenced in Chapter 6.

7.3.3 Quality assurance in VET

The target countries have institutions in charge of monitoring quality in VET, but their collaboration in EQAVET has not yet produced common procedures and guidelines (see Table 87 and Table 88).

The *Ministère de l'Éducation nationale de l'Enseignement supérieur et de la Recherche* is in charge of Quality Assurance in Vocational Education and Training in France, the *Deutsche Referenzstelle für Qualitätssicherung in der beruflichen Bildung - DEQA-VET* is the National Reference Point for Quality Assurance in Vocational Education and Training in Germany and the *Istituto per lo sviluppo della formazione professionale dei lavoratori - ISFOL* is the National Institute for the Development of Vocational Training in Italy.

In Spain, the *Instituto Nacional de Evaluación Educativa – INEE* is the institution responsible for the evaluation of the education system and the *Instituto Nacional de las Cualificaciones - INCUAL* is the technical agency that tracks the qualifications´ courses.

In the United Kingdom, the VET quality assurance has different institutions. In England, the Office for Standards in Education, Children's Services and Skills - Ofsted, in Northern Ireland, the Education and Training Inspectorate, in Wales, the National Council for Education and Training for Wales and in Scotland the Scottish Qualifications Authority (SQA).

TABLE 87 INSTITUTIONS RESPONSIBLE FOR QUALITY ASSURANCE OF VET - EQAVET IN FRANCE, GERMANY, ITALY, SPAIN AND THE UNITED KINGDOM

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
The *Ministère de l'Éducation nationale de l'Enseignement supérieur et de la Recherche* is in charge of Quality Assurance in Vocational Education and Training as it defines strategies, policies, framework and learning and teaching programmes and ensures staff recruitment and management of training activities. This Ministry is also responsible for vocational education at secondary level, including a national curriculum, exams and diplomas, recruitment, training and other related activities. The department "High Council for Evaluation" evaluates the performance and activities of teachers, covering the field of secondary vocational training	The *BMBF* assigned in 2008 the *BIBB* the task of setting up the *Deutsche Referenzstelle für Qualitätssicherung in der beruflichen Bildung - DEQA-VET* (National Reference Point for Quality Assurance in Vocational Education and Training).	*Istituto per lo sviluppo della formazione professionale dei lavoratori - ISFOL* (National Institute for the Development of Vocational Training)	The *Instituto Nacional de Evaluación Educativa – INEE* is the institution responsible for the evaluation of the education system in the *Ministerio de Educación, Cultura y Deporte* and works in collaboration with the *Comunidades Autónomas*. The *Instituto Nacional de las Cualificaciones - INCUAL* is the technical agency that helps the *Consejo General de Formación Profesional* to pursue the objectives of the *Sistema Nacional de Cualificaciones y Formación Profesional*.	England: The Ofsted – the Office for Standards in Education, Children's Services and Skills Northern Ireland: Education and Training Inspectorate Wales: The National Council for Education and Training for Wales	The Scottish Qualifications Authority (SQA) is the national body responsible for the design, development, accreditation, verification, quality assurance and certification of vocational education.

Source: Compiled by the author with the information described and referenced in Chapter 6.

TABLE 88 EUROPEAN QUALITY ASSURANCE IN VOCATIONAL EDUCATION AND TRAINING - EQAVET IN FRANCE, GERMANY, ITALY, SPAIN AND THE UNITED KINGDOM

France	Germany	Italy	Spain	United Kingdom	
				E, W & NI	Scotland
The national budget is divided in missions, programmes and measures with performance indicators. The Research, Surveys and Statistics Development Department (DARES) of the Ministry of Employment, the Evaluation, Forecasting and Performance Department (DEPP) of the Ministries of Education and of Higher Education and Research, and the Centre for qualifications Studies and Research (CEREQ) compile statistics and conduct studies to assess the effectiveness of the policies implemented. At regional level, the regional councils, in charge of apprenticeships and vocational training, have adopted 'quality charters'.	The DEQA-VET's work is aimed not only on VET responsibles, but also at the organizations, companies and enterprises, which assure quality in vocational education and training.	The main goals of ISFOL are to inform main national stakeholders about the activities of the EQAVET, to provide active support for the development of this programme, to apply methods to ensure and develop quality in VET, to raise awareness among stakeholders of the benefits of QA tools and indicators and to coordinate organized national activities.	The Royal Decree on the General Organization of Vocational Education and Training in the Education System, dedicates three articles to quality in IVET: 1. Actions and measures to foster innovation and quality. 2. Establishment of both the Reference Framework for Quality Assurance in IVET and the National Reference Point. 3. Development of a Quality Network for IVET, jointly with the *Comunidades Autónomas*. The *Comunidades Autónomas* may establish their own standards in line with standards such as EFQM or ISO.	In England, in Wales (where it is named Dysg) and in Northern Ireland, the Department for Employment and Learning's (DEL) Quality Improvement Team is in charge of the Quality Standards and dissemination of good practice for most of DEL funded provision but not for the Quality Agenda in Northern Ireland.	In Scotland, the dissemination of best practices in QA is done by the Scottish Further Education Unit. Investors in People is a national quality standard for improving an organisation's performance taking into account good practice.

Source: Compiled by the author with the information described and referenced in Chapter 6.

7.4 Erasmus+ VET mobility

7.4.1 Monitoring Erasmus+ VET in France, Germany, Italy, Spain and the United Kingdom

This comparative section analyses the VET mobility in France, Germany, Italy, Spain and the United Kingdom during the period 2014-2016 using the Erasmus+ mathematical tools:

- *Erasmus+ Key Indicators*
- *Regional Mobility Efficiency – RME*
- *Students Fair Access to funds – SFAF*
- *National Equity - NE*

The Erasmus + Key Indicators offer a general perspective on how the funds have been distributed and communicate similarities and differences in the funding procedures in the studied nations.

The Regional Mobility Efficiency – RME, the Students Fair Access to funds – SFAF and the National Equity offer three points of view that focus on the three types of focus groups that are interested in optimising their funding actions: the regions, the students and the nation.

The following radar charts (see Figure 84, Figure 85 and Table 89) summarize the information coming from these three perspectives.

The detailed analysis can be found later in this chapter.

TABLE 89 REGIONAL, STUDENTS´AND NATIONAL 2014/2016 AVERAGE VALUES

	Region - RME (min)	Region - RME (max)	Students - SFAF	Nation - NE
France	9%	194%	57%	72%
Germany	13%	368%	85%	82%
Italy	0%	551%	52%	65%
Spain	10%	237%	88%	81%
United Kingdom	11%	214%	72%	77%

FIGURE 84 REGIONAL, STUDENTS´AND NATIONAL 2014/2016 AVERAGE VALUES - MINIMUM RME VALUES

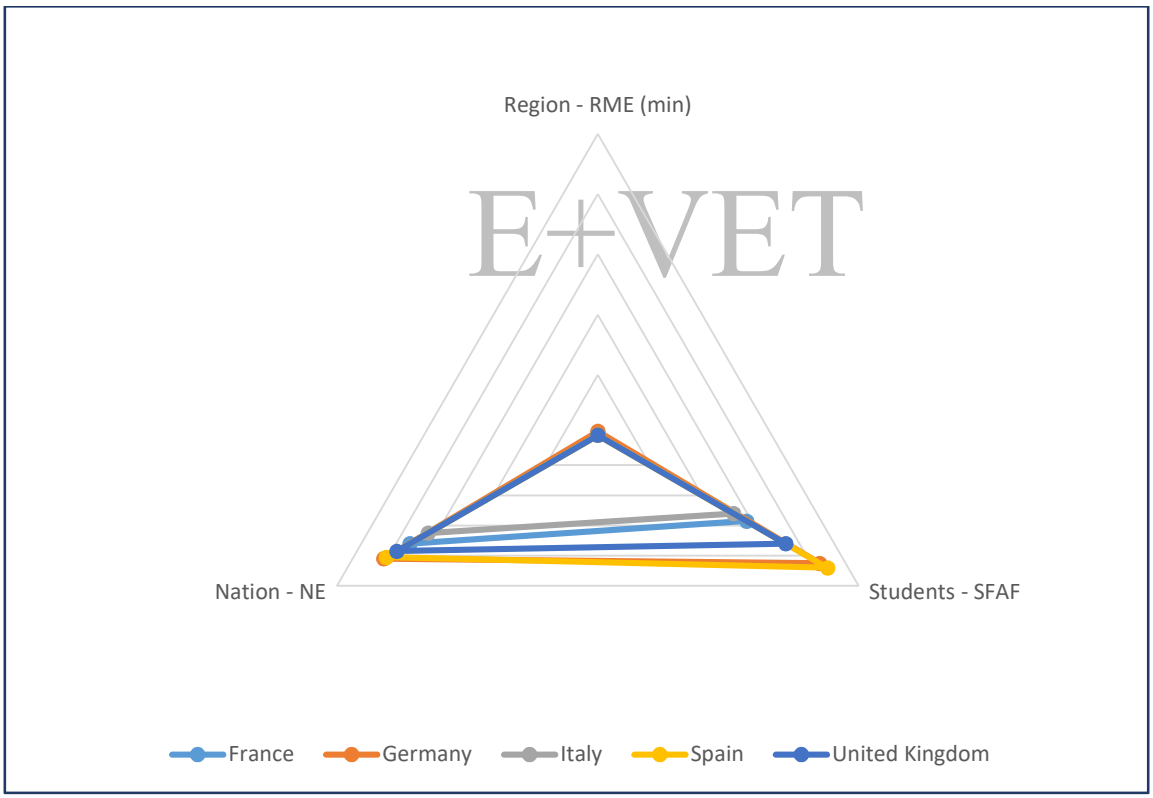
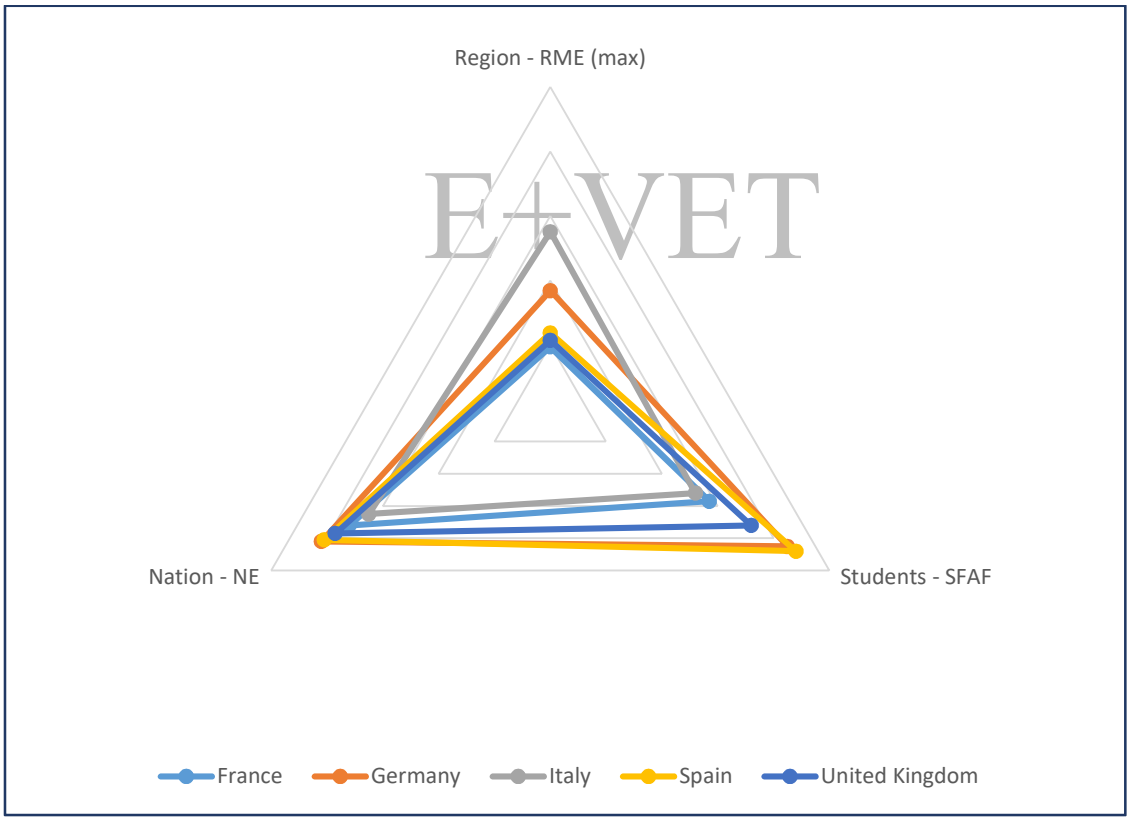


FIGURE 85 REGIONAL, STUDENTS´AND NATIONAL 2014/2016 AVERAGE VALUES - MAXIMUM RME VALUES



7.4.2 Erasmus+ Key Indicators

During the period 2014/2016 Germany was the country that more projects funded, 1427, followed by France, 822, Spain, 819 and, at a distance, the United Kingdom, 311 and Italy 270 (see Table 92).

These projects were awarded to 823 different institutions in Germany, 552 in France, 504 in Spain, 219 in Italy and 211 in the United Kingdom (see Table 92).

A high amount of projects and institutions can involve a heterogeneous distribution of the funds and the capacity of reaching more funding spots. Germany scores high in these indicators and the United Kingdom and Italy low.

Each of these institutions received an average of 1.73 projects per institution in Germany, 1.63 in Spain, 1.49 in France, 1.47 in the United Kingdom and 1.23 in Italy. If the average projects per institution is high, it means that the institutions of the mentioned country have been able to repeat their projects in different years providing their VET sector a stable financing background to accomplish mid-term objectives (see Table 92).

The same principle is highlighted by the percentage of institutions that have always received funds. 21% of all the German institutions received funds in all the three years from 2014 to 2016, followed by 17% of the institutions in Spain, 11% in France and the United Kingdom and only 3% in the case of Italy (see Table 92).

Thus Germany and Spain are the countries that offer more stability to the funded institutions, Italy the least.

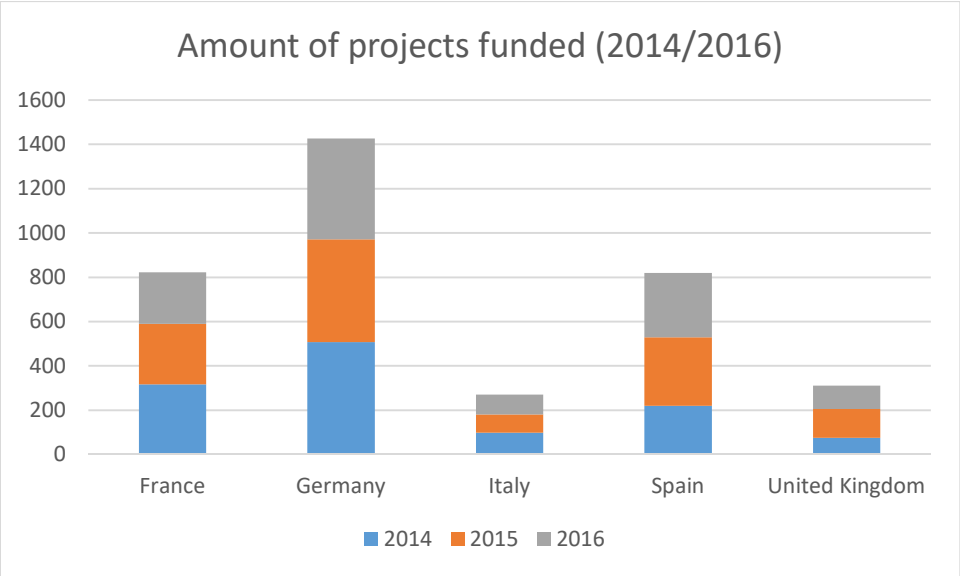
The average project size was, in the case of Italy, the far biggest with 286,702 €, followed at a distance by the United Kingdom, 155,415 € and France, 100,211 €. The smallest average projects were found in Spain, 75,572 € and Germany, 71,532 € (see Table 90).

TABLE 90 MONITORING ERASMUS+ VET – AVERAGE VALUES 2014/2016

	France	Germany	Italy	Spain	UK
National Budget (€)	27,306,414	33,922,729	25,650,324	20,046,244	16,285,965
Number of projects	**274**	**476**	**90**	**273**	**104**
Biggest Project (€)	1,772,226	1,147,047	911,309	1,204,469	774,547
Smallest Project (€)	4,366	2,243	21,352	2,914	4,799
Average Project (€)	100,211	71,532	286,702	75,572	155,415
Projects / Region	11.91	29.73	4.50	14.37	8.64
€/ Region	1,187,235	2,120,171	1,282,516	1,055,065	1,357,164
Amount of projects that represent 20% of the budget	4.33	13.33	8.33	6.00	5.33
… percentage of nations total	2%	3%	9%	2%	5%
Amount of projects that represent 50% of the budget	22.0	80.0	25.7	30.3	16.7
… percentage of nations total	8%	17%	29%	11%	16%
Most frequent size, in % of national budget	0.1%	0.1%	1.2%	0.1%	0.4%
amount of frequent size projects	117.67	187.67	7.33	87.00	18.33
amount of frequent size projects, % over total	42%	39%	8%	27%	18%
… and represent % of the total budget	12%	19%	16%	9%	6%
Students in regions with more than the national average budget	46.32%	27.43%	37.54%	42.94%	53.93%
Students in regions with less than the national average budget	53.68%	72.57%	62.46%	57.06%	46.07%
Students in regions with more than double the national average budget	8.15%	6.45%	11.29%	4.63%	4.47%
Students in regions with less than half the national average budget	34.89%	8.51%	40.64%	7.67%	23.98%
Students in regions with no access to funds	1.91%	0.00%	4.07%	0.50%	0.00%
Students with a Fair Access to Funds – SFAF	**56.96%**	**85.03%**	**48.08%**	**87.70%**	**71.56%**
National equity	**72.16%**	**82.08%**	**65.86%**	**81.25%**	**77.37%**
Regions	23	16	20	19	12
Regions with biggest project greater than 30%	15.67	6.33	10.67	10.33	7.67
… percentage of nations total	68%	40%	53%	54%	64%
Regions with biggest project greater than 50%	7.67	2.67	7.00	5.33	2.33
… percentage of nations total	33%	17%	35%	28%	19%
Institutions that have always received funds (2014/16)	**11%**	**21%**	**3%**	**17%**	**11%**
Average projects per institution (2014/16)	**1.49**	**1.73**	**1.23**	**1.63**	**1.47**

Source: Compiled by the author with the information described and referenced in the sections 6.x.6. In the case of 2016, the values for Spain reflect the first financing round.

FIGURE 86 AMOUNT OF VET KA1 ERASMUS+ PROJECTS FUNDED (2014/2016)



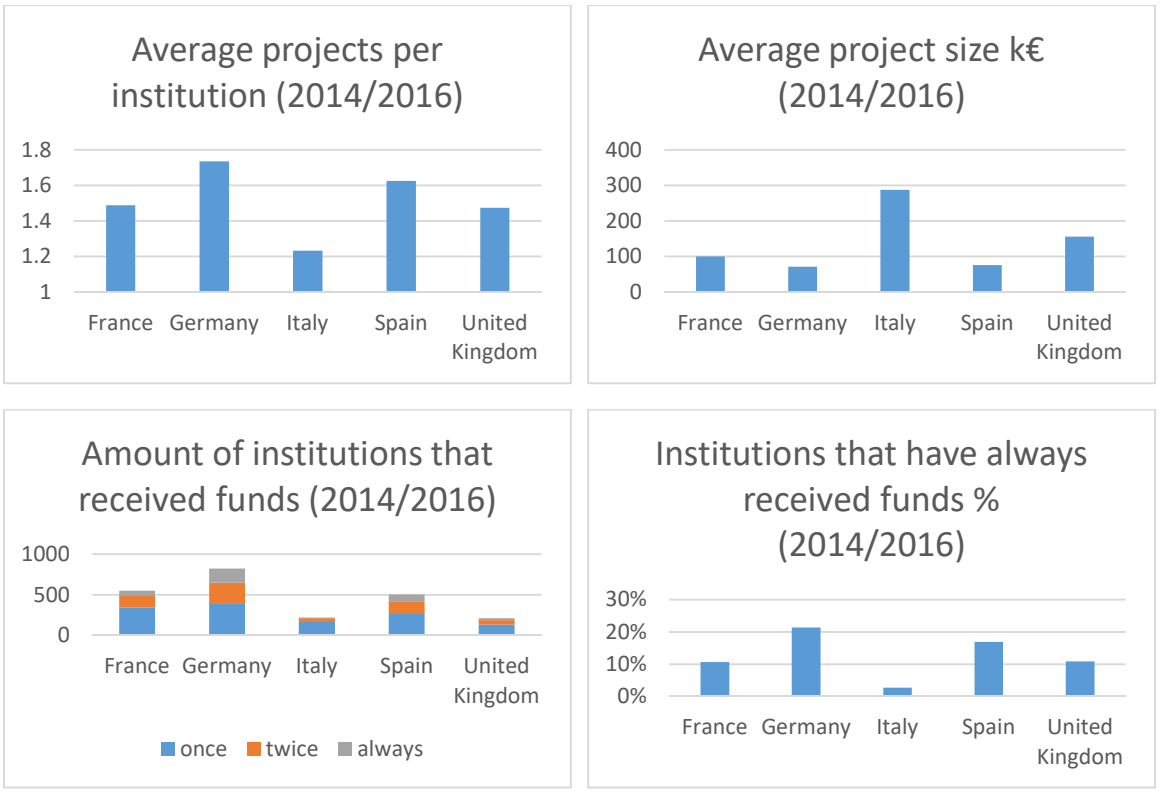
Source: Compiled by the author with the information described and referenced in the sections 6.x.6. In the case of 2016, the values for Spain reflect the first financing round.

TABLE 91 AMOUNT OF VET KA1 ERASMUS+ PROJECTS FUNDED (2014/2016)

	France	Germany	Italy	Spain	United Kingdom
2014	317	507	99	220	76
2015	273	464	82	309	130
2016	232	456	89	290	105
Total	822	1427	270	819	311

Source: Compiled by the author with the information described and referenced in the sections 6.x.6. In the case of 2016, the values for Spain reflect the first financing round.

FIGURE 87 AMOUNT OF FUNDED INSTITUTIONS (2014/2016)



Source: Compiled by the author with the information described and referenced in the sections 6.x.6. In the case of 2016, the values for Spain reflect the first financing round.

TABLE 92 AMOUNT OF FUNDED INSTITUTIONS (2014/2016)

	France	Germany	Italy	Spain	UK
Average projects per institution (2014/2016)	**1.49**	**1.73**	**1.23**	**1.63**	**1.47**
Average project size (2014/2016)	100,211 €	71,532 €	286,702 €	75,572 €	155,415 €
Institutions that have received funds (2014/2016)	**552**	**823**	**219**	**504**	**211**
… once	341	395	174	274	134
… twice	153	252	39	145	54
… always	58	176	6	85	23
… once (%)	62%	48%	79%	54%	64%
… twice (%)	28%	31%	18%	29%	26%
… always (%)	11%	21%	3%	17%	11%

Source: Compiled by the author with the information described and referenced in the sections 6.x.6. In the case of 2016, the values for Spain reflect the first financing round.

FIGURE 88 AVERAGE ANNUAL PROJECT SIZE

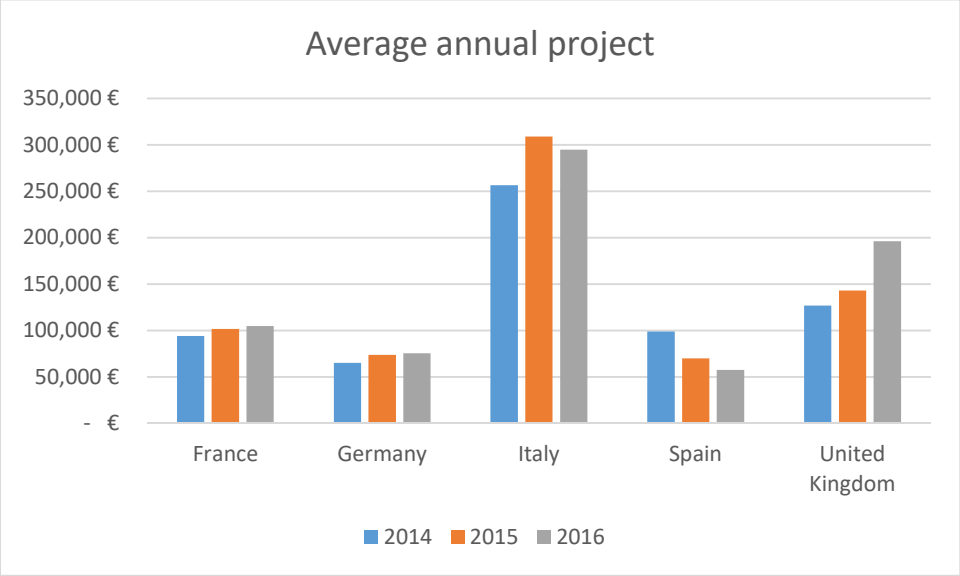


TABLE 93 AVERAGE ANNUAL PROJECT SIZE

	France	Germany	Italy	Spain	United Kingdom
2014	94,090 €	65,136 €	256,370 €	99,105 €	126,824 €
2015	101,829 €	73,812 €	308,893 €	69,922 €	143,198 €
2016	104,713 €	75,648 €	294,844 €	57,689 €	196,225 €
Period average	100,211 €	71,532 €	286,702 €	75,572 €	155,415 €

Source: Compiled by the author with the information described and referenced in the sections 6.x.6. In the case of 2016, the values for Spain reflect the first financing round.

7.4.3 Regional Mobility Efficiency - RME of all the regions in the target countries

The region of Molise in Italy is the region with the highest Regional Mobility Efficiency – RME, 542%, the region with highest average Erasmus+ VET (KA102/116) funds per student in the target countries (see Table 94).

There are 12 regions in France, Germany, Italy, Spain and the United Kingdom with an average RME higher than 200%, the value that indicates the region receives more than double the national average. 5 of these regions are Italian (Molise, 542%, Umbria,331%, Toscana, 275%, Basilicata, 234%, Marche, 229%), 3 of them German (Berlin, 368%, Sachsen-Anhalt, 241%, Hamburg, 219%), 2 are French (Auvergne, 241%, Île-de-France, 213%). Spain (Galicia, 237%) and the United Kingdom (Northern Ireland, 214%) where each have a region among this group (see Table 94).

There are 25 regions with an average RME lower than 50%, the value that indicates the region receives less than half the national average. 9 of these regions are Italian (Sardegna, 47%, Sicilia, 45%, Lombardia, 33%, Trentino Alto Adige / Südtirol, 31%, Puglia, 22%, Liguria, 0%, Valle d'Aosta / Vallée d'Aoste, 0%) and 12 of them are in France (Outre-Mer, 49%, Bourgogne, 49%, Poitou-Charentes, 38%, Languedoc-Roussillon, 35%, Nord-Pas-de-Calais, 32%, Limousin, 26%, Franche-Comté, 21%, Picardie, 15%, Alsace, 6%, Centre, 4%, Basse-Normandie, 2%, Corse, 0%). In Germany there are 3 of these regions (Thüringen, 49%, Rheinland-Pfalz, 23%, Saarland, 13%) and the United Kingdom has 2 of them (South East 37%, East of England, 11%). Spain has one region in this group (Cantabria, 10%) (see Table 94).

Of these 25 regions, Corse in France received funds only once and Liguria and Valle d'Aosta / Vallée d'Aoste in Italy have never received funds during the 2014/2016 period (see Table 94).

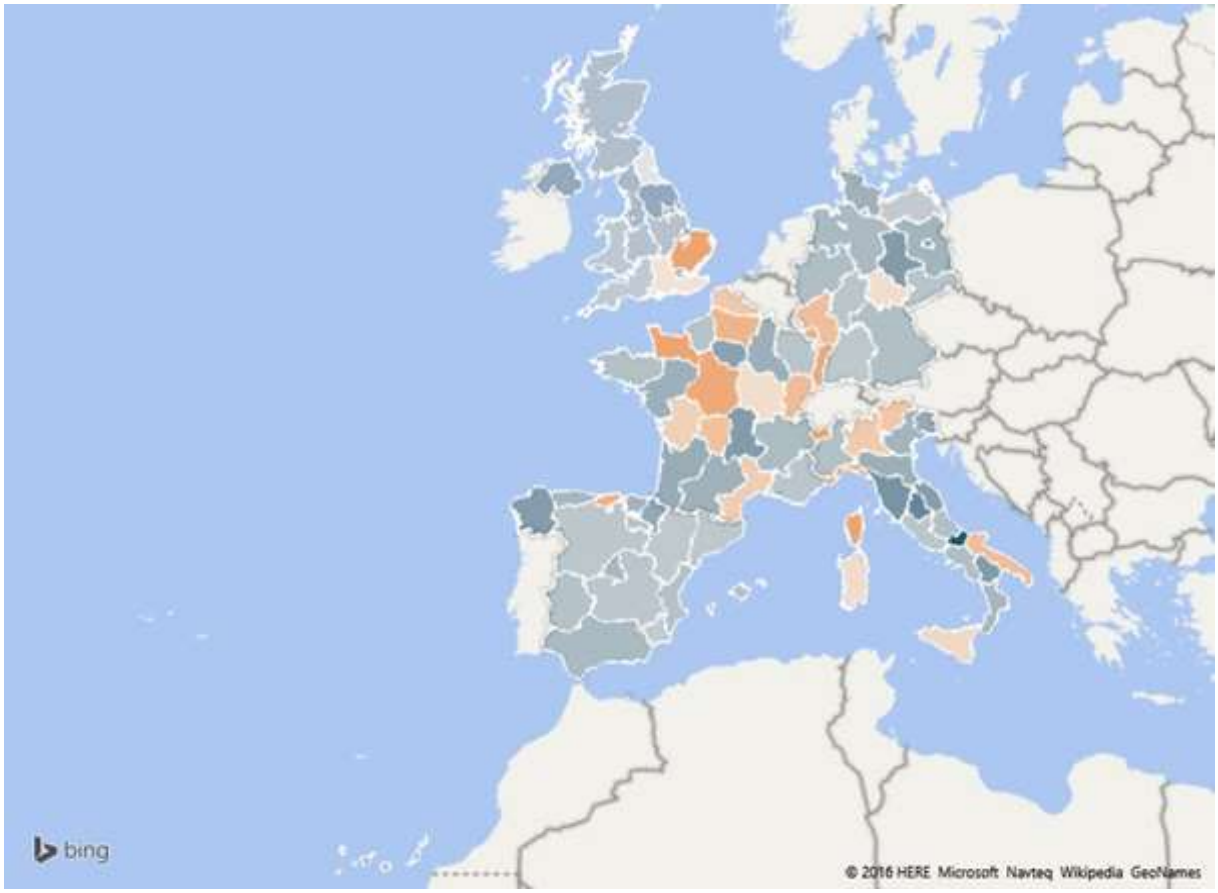
TABLE 94 REGIONAL MOBILITY EFFICIENCY RME 2014/2016

Rank	Country	EU Region	Average
1	Italy	Molise	542%
2	Germany	Berlin	368%
3	Italy	Umbria	331%
4	Italy	Toscana	275%
5	Germany	Sachsen-Anhalt	241%
6	France	Auvergne	241%
7	Spain	Galicia	237%
8	Italy	Basilicata	234%
9	Italy	Marche	229%
10	Germany	Hamburg	219%
11	United Kingdom	Northern Ireland	214%
12	France	Île-de-France	213%
13	Spain	Comunidad Foral de Navarra	187%
14	Italy	Friuli-Venezia Giulia	180%
15	France	Aquitaine	172%
16	France	Champagne-Ardenne	160%
17	United Kingdom	Yorkshire and the Humber	159%
18	France	Pays de la Loire	159%
19	United Kingdom	London	154%
20	Italy	Emilia-Romagna	153%
21	France	Midi-Pyrénées	151%
22	Germany	Schleswig-Holstein	150%
23	Spain	País Vasco	142%
24	Germany	Brandenburg	140%
25	Italy	Veneto	137%
26	Spain	Ciudad Autónoma de Melilla	134%
27	United Kingdom	North West	126%
28	Spain	Comunidad de Madrid	125%
29	Spain	Principado de Asturias	124%
30	Italy	Calabria	123%
31	Spain	Andalucía	116%
32	United Kingdom	Scotland	116%
33	Germany	Niedersachsen	113%
34	United Kingdom	West Midlands	111%
35	United Kingdom	East Midlands	108%
36	France	Rhône-Alpes	108%
37	Spain	Canarias	103%
38	Germany	Nordrhein-Westfalen	99%
39	United Kingdom	Wales	97%
40	Italy	Campania	97%
41	Germany	Bayern	96%
42	United Kingdom	South West	94%
43	Spain	Illes Balears	92%
44	France	Bretagne	91%
45	Italy	Abruzzo	90%
46	Italy	Piemonte	89%
47	Spain	Comunidad Valenciana	85%
48	Spain	La Rioja	82%
49	Spain	Extremadura	81%
50	Spain	Ciudad Autónoma de Ceuta	77%
51	France	Haute-Normandie	77%
52	Germany	Sachsen	75%

53	Germany	Bremen	74%
54	Germany	Hessen	71%
55	France	Lorraine	69%
56	France	Provence-Alpes-Côte d'Azur	67%
57	Spain	Castilla-La Mancha	65%
58	Italy	Lazio	64%
59	Spain	Castilla y León	61%
60	Germany	Baden Württemberg	59%
61	Spain	Cataluña	59%
62	Spain	Aragón	57%
63	United Kingdom	North East	55%
64	Germany	Mecklenburg-Vorpommern	51%
65	Spain	Región de Murcia	51%
66	France	Outre-Mer	49%
67	Germany	Thüringen	49%
68	France	Bourgogne	49%
69	Italy	Sardegna	47%
70	Italy	Sicilia	45%
71	France	Poitou-Charentes	38%
72	United Kingdom	South East	37%
73	France	Languedoc-Roussillon	35%
74	Italy	Lombardia	33%
75	France	Nord-Pas-de-Calais	32%
76	Italy	Trentino Alto Adige / Südtirol	31%
77	France	Limousin	26%
78	Germany	Rheinland-Pfalz	23%
79	Italy	Puglia	22%
80	France	Franche-Comté	21%
81	France	Picardie	15%
82	Germany	Saarland	13%
83	United Kingdom	East of England	11%
84	Spain	Cantabria	10%
85	France	Alsace	6%
86	France	Centre	4%
87	France	Basse-Normandie	2%
88	France	Corse	**0%**
89	Italy	Liguria	**0%**
90	Italy	Valle d'Aosta / Vallée d'Aoste	**0%**

Source: Compiled by the author with the information described and referenced in the sections 6.x.6. In the case of 2016, the values for Spain reflect the first financing round.

FIGURE 89 MAP REGIONAL MOBILITY EFFICIENCY RME 2014/2016



Source: Compiled by the author with the information described and referenced in Table 94.
Blue represents high RME values, greater than 50%. Orange represents low RME values, lower than 50%

7.4.1 Students with a Fair Access to Funds – SFAF in the target countries

The present project considers that a region offers their students a fair access to funds if its RME is bigger than 50% and lower than 200%. In other words, a student has a fair access to funds if he/she studies in a region receiving between half and double the national funds per student average.

The total amount of students that are located in "fair" regions (50%< RME < 200%) are the national quantity of students that have a fair access to funds. The national Students with a Fair Access to Funds-SFAF value is the percentage from all the country´s VET students that are located in "fair" regions.

Spain (83% in 2014, 92% in 2015, 89% in 2016) and Germany (84% in 2014, 87% in 2015, 85% in 2016), had the highest SFAF average values, Spain 88% and Germany 85%, of the three years period (see Table 95).

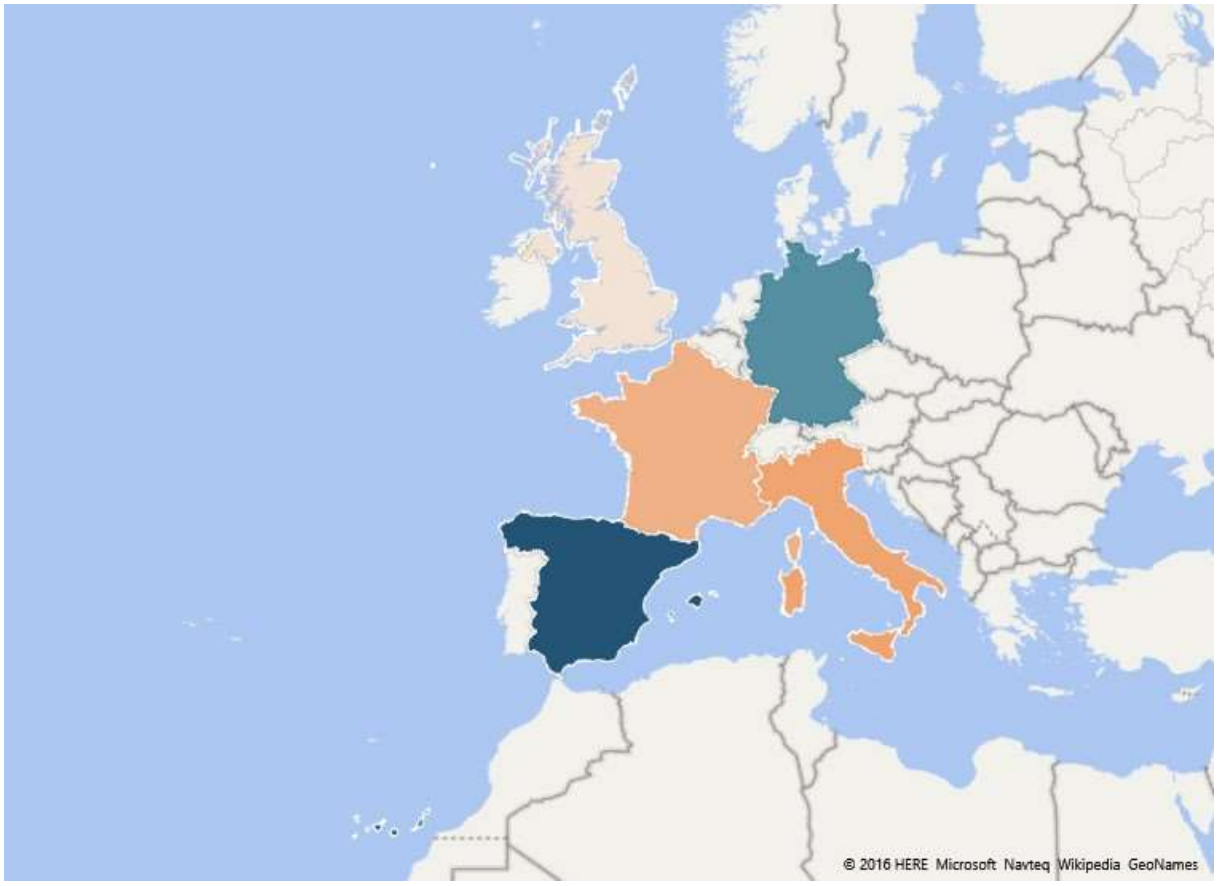
United Kingdom started with a SFAF of 54% in 2014 and increased to 75% in 2015 and 85% in 2016. Its SFAF average was 72% (see Table 95).

France (58% in 2014, 67% in 2015, 46% in 2016) and Italy (50% in 2014, 47% in 2015, 47% in 2016) show the lowest SFAF values of the group. In both cases, France and Italy had less than half of the students (France 46%, Italy 47%) with a fair access to funds in 2016 and a total average during the period of 57%, France and 48%, Italy (see Table 95).

Taking into account the SFAF values it is possible to mention three groups of countries:

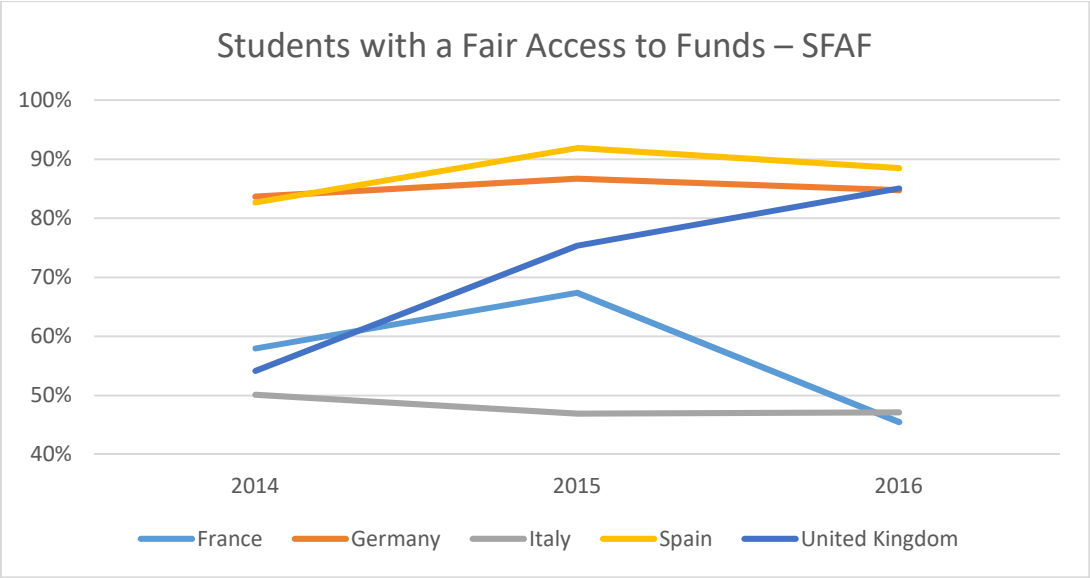
- Spain and Germany, with more than 4 out of 5 students with good funding opportunities
- United Kingdom, starting low, but catching up
- France and Italy, where only around half of their students have a fair access to funds

FIGURE 90 MAP STUDENTS WITH A FAIR ACCESS TO FUNDS - SFAF (2014/2016)



Source: Compiled by the author with the information described and referenced in see Table 95.
Blue represents high SFAF values, greater than 75%. Orange represents low SFAF values, lower than 75%

FIGURE 91 STUDENTS WITH A FAIR ACCESS TO FUNDS - SFAF (2014/2016)



Source: Compiled by the author with the information described and referenced in the sections 6.x.6. In the case of 2016, the values for Spain reflect the first financing round.

TABLE 95 STUDENTS WITH A FAIR ACCESS TO FUNDS - SFAF (2014/2016)

	France	Germany	Italy	Spain	United Kingdom
2014	58%	84%	50%	83%	54%
2015	67%	87%	47%	92%	75%
2016	46%	85%	47%	89%	85%
Average	57%	85%	48%	88%	72%

Source: Compiled by the author with the information described and referenced in the sections 6.x.6. In the case of 2016, the values for Spain reflect the first financing round.

7.4.2 National Equity – NE in the target countries

As mentioned in Chapter 2, the National Equity – NE indicates the total mathematical equity of the funding process in a nation. A value of NE=100% means the country would be equally offering the Erasmus+ VET funds to all the students of the different regions.

Germany has an average NE of 82% (81% in 2014 and 2015, 84% in 2016) and Spain an average NE of 81% (80% in 2014, 83% in 2015, 81% in 2016). These are the two countries that perform best in this indicator (see Table 96).

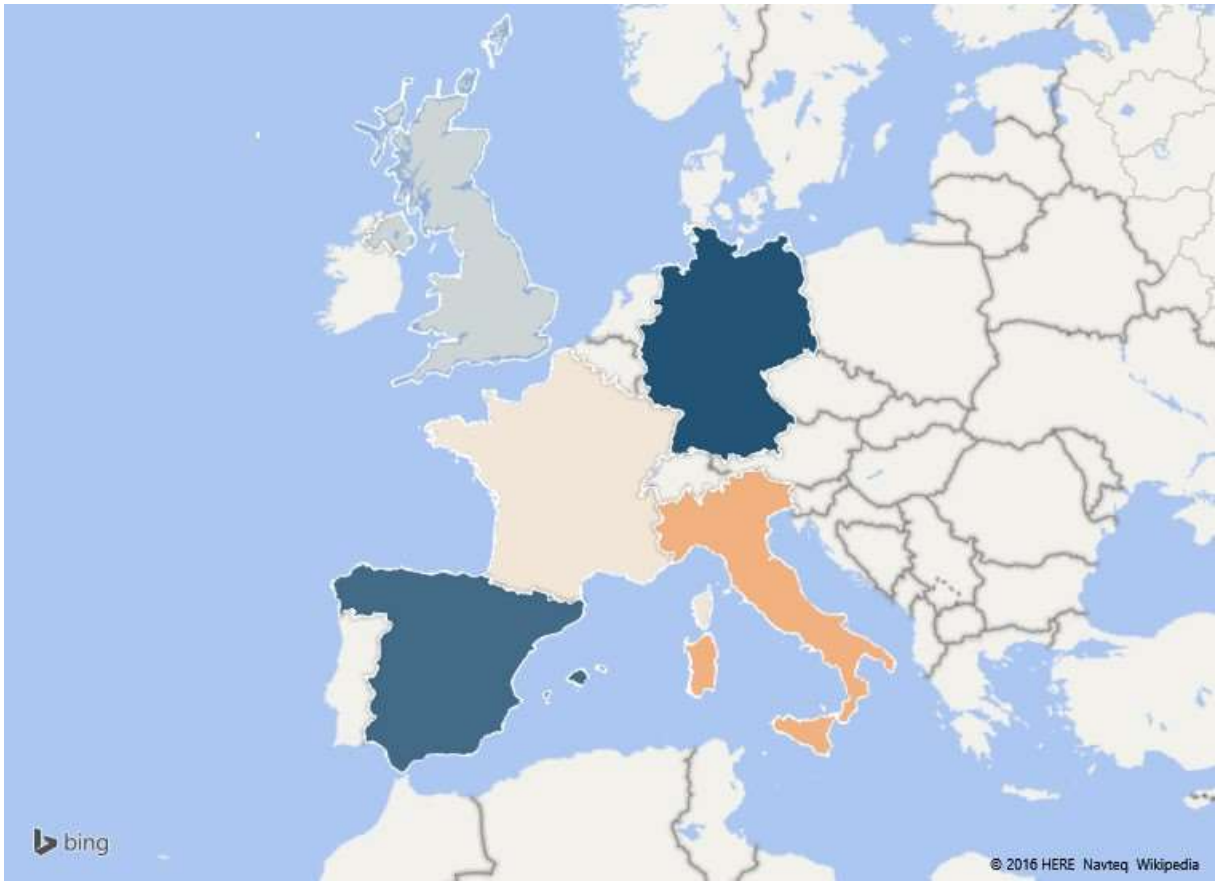
The United Kingdom increased its NE from a low 70% in 2014 to 80% in 2015 and 82% in 2016 and made an average of 77%, reaching the performance of Germany and Spain in 2016 (see Table 96).

France with an average NE of 72% (72% in 2014, 76% in 2015, 68% in 2016) and Italy with an average NE of 66% (69% in 2014, 67% in 2015, 62% in 2016) scored lowest in this indicator (see Table 96).

Taking into account the National Equity values it is possible to mention three groups of countries:

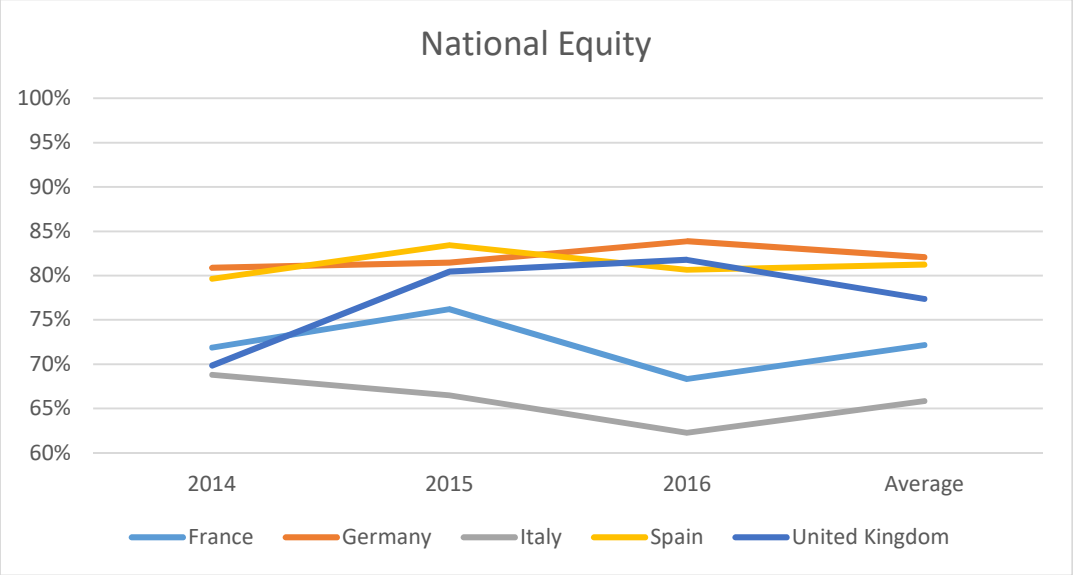
- Germany and Spain, always funding with equity
- United Kingdom, starting low, but improving
- France and Italy, always funding poorly

FIGURE 92 MAP NATIONAL EQUITY - NE (2014/2016)



Source: Compiled by the author with the information described and referenced in Table 96.
Blue represents high NE values, greater than 75%. Orange represents low NE values, lower than 75%

FIGURE 93 NATIONAL EQUITY (2014/2016)



Source: Compiled by the author with the information described and referenced in the sections 6.x.6. In the case of 2016, the values for Spain reflect the first financing round.

TABLE 96 NATIONAL EQUITY (2014/2016)

	France	Germany	Italy	Spain	United Kingdom
2014	72%	81%	69%	80%	70%
2015	76%	81%	67%	83%	80%
2016	68%	84%	62%	81%	82%
Average	72%	82%	66%	81%	77%

Source: Compiled by the author with the information described and referenced in the sections 6.x.6. In the case of 2016, the values for Spain reflect the first financing round.

7.5 Summary: Similarities and differences

While the unemployment rate in Germany has gone down from 8.7% in 2007 to 5% in 2014, in Italy and Spain it has strongly increased, reaching 12.7% and 24.4% respectively in 2014. France and the United Kingdom figures have only gone up slightly in these years. When you focus on long-term unemployment, youth unemployment and the share of NEET youth only Germany improves its rates from 2007. The rest of the countries are worse in nearly all of these indicators than before the crisis.

In the case of innovation, France has the biggest percentage of high-technology exports, declares the minimum of metric tons per capita of CO2 and has the maximum of R&D technicians. Germany leads in the amount of patent applications and in the expenditure and amount of researchers in R&D. The disadvantage is that Germany is the country that produces the most CO2. Italy is the leader in renewable electricity and the worst in the amount of internet users and R&D researchers. Spain was the leader of renewable electricity until 2012 and is the worst situated in terms of high-technology exports, patent applications and R&D expenditure. The United Kingdom has the biggest amount of internet users and the least amount of renewable electricity and R&D technicians.

The percentage of students in vocational programmes was led in 2013 by Italy, 36%, followed by the United Kingdom, 32.1%, France, 18.8%, Germany 18.4% and Spain, 16.6%. These five countries together represent 54% of all the VET students in Europe.

In the five countries the students need to demonstrate a general education level to enter upper secondary VET studies. In the case of the United Kingdom the VET providers can also take into account other requirements.

In France, the uppersecondary VET can include general education courses. In Germany, the dual system is an important, but not the only VET path. In Italy, students can choose between

the *Istituti* and the *IeFP* courses, provided by the regions. In Spain, the uppersecondary VET is frequently taught at schools that also offer general education. In the United Kingdom the VET is not really differentiated from the general education and students can combine different types of courses in their curriculum.

In the case of Higher Education, France offers VET studies at universities. Germany offers some HE VET alternatives for students mainly following the VET path. In Italy and Spain there is a HE course that follows the previous uppersecondary VET studies. In the United Kingdom the HE VET studies are offered at universities and other training providers and there is no difference between HE general and vocational studies.

All of the five countries have referenced their qualifications to the EQF, but in the case of Italy there is no NQF yet in place. The usage of ECVET credits is underway in France, Italy, Spain and the United Kingdom. In the case of Germany, the studies are commonly not divided into modules with credits and this makes it difficult to approach the ECVET framework. ECTS credits are used to some extent in HE VET of all the target countries. EQAVET as a quality assurance framework is still not playing a key role in France, Germany, Italy, Spain and the United Kingdom.

Analysing the distribution of Erasmus+ VET mobility funds during the period 2014/2016 Germany was the country that more projects funded, 1427, followed by France, 822, Spain, 819 and, at a distance, the United Kingdom, 311 and Italy 270.

These projects were awarded to 823 different institutions in Germany, 552 in France, 504 in Spain, 219 in Italy and 211 in the United Kingdom.

Germany was the country with the highest average of projects per institution and the highest average percentage of institutions that received funds always.

The smallest average projects were found in Spain and Germany. The biggest average project size was located in Italy, followed at a distance by the United Kingdom and France.

Regional perspective

Five out of twelve of the regions with the highest Regional Mobility Efficiency- RMEs were Italian, including the highest of all, Molise.

France has one and Italy two regions, with an RME close to 0%. Corse in France received funds only once during the three years and the two Italian regions of Liguria and Valle d'Aosta / Vallée d'Aoste never received funds during the analysed period.

Student´s perspective

The highest average Students with a Fair Access to Funds - SFAF values correspond to Spain, 88% and Germany, 85%. These were the countries with more students receiving between half and double the national funds per student average.

The United Kingdom started low, but caught up in 2016.

France and Italy show the lowest SFAF values of the group. In both cases, France and Italy had less than half of the students (France 46%, Italy 47%) with a fair access to funds in 2016 and a total average during the period of 57%, France and 48%, Italy.

National perspective

The National Equity of Germany and Spain have been the highest during the whole analysed period (on average Germany NE=82%, Spain NE=81%) followed by the United Kingdom (on average NE=77%).

France and, specially, Italy had always the worst National Equity values (on average France NE=72%, Italy NE=66%)

IV FINAL REFLECTIONS

8. Conclusion

The VET systems in Europe still have a long way to go until they converge.

The Erasmus+ programme supports this process and it is necessary to monitor the distribution of the funds to guarantee it reaches the widest range of the population.

8.1 VET in Europe

The British people who grew up with the consequences of World War II and have lived in the EEC/EU since 1973 feel the European Union has not done enough to improve "the living and working conditions of their people" (EEC, 1957) and have decided they do not want to be part of the EU.

More than half a century after laying down the "general principles for implementing a common vocational training policy" (COUNCIL OF THE EUROPEAN ECONOMIC COMMUNITY, 1963) Europe still does not have a common vocational training policy.

During the Middle Ages, there was a quite homogeneous professional training system that even included international mobility periods as part of the education of the apprentices. Qualifications were valid internationally and guaranteed performance quality. Skilled workers could learn, teach and work all over Europe.

This situation changed with the Industrial Revolution and the disappearance of the guilds. Every State developed different VET schemes and it was not until the Treaty of Paris, with the creation of the European Coal and Steel Community (ECSC) in 1951 that different European countries embraced the idea of building together a common education and training structure.

This idea has proved to be difficult to implant. European education policies are constrained by the idea "(i) It is advisable scrupulously to respect national structures and traditions where education is concerned, but to promote a necessary harmonization by means of permanent concerted action at all levels and through more and more educational exchanges.". This statement, that appeared in the Janne Report (Janne, 1973), and has been later repeated even in the EU legislation, is nearly an oxymoron: we should harmonize education at all levels, without changing the national structures and traditions.

The European institutions have managed to find a way out of this labyrinth. EQF, EQAVET, ECVET, ECTS and Erasmus+ are supranational frameworks that offer the Member States umbrella structures that enable international compatibility. Each State is free to establish gateways between their training systems and these frameworks.

This is a top-down harmonization procedure. As it was not possible to transpose the same specific VET system into each Member State, and attain in this form the harmonization, the mentioned frameworks are ideal meeting points and every Member State is expected to arrive at some moment at these terminal stations.

The present study examines the global situation of VET in France, Germany, Italy, Spain and the United Kingdom. The project outlines the situation in these nations of their VET frameworks, the European and the National Qualification Frameworks, Credits in VET, EQAVET.

As a result of this investigation the consideration can be exposed that each country has quite different VET education schemes and that it is not easy to establish direct connections between VET studies of each of the countries. At this moment it is not possible for a student to start his training in one of these European countries and smoothly continue in one of the other countries. It is also difficult for the students to get their VET certificate recognised in the different countries, and it is not easy for them to enter the job market abroad as a qualified professional. Neither can they get their VET studies recognised to continue their training in any of the analysed countries. These aims mentioned in the Copenhagen process are still underway.

This position greatly differs from the situation found at universities offering Higher Education. The Bologna process has been brought further on and students studying at European universities have smoother transnational qualification paths than those offered to VET students.

The development of the National Qualification Frameworks is advancing steadily in the analysed nations. The assignment of national qualifications to the levels of the European Qualifications Framework will foster the recognition of VET studies, certificates and qualifications all over Europe.

One approach to the qualifications schemes is to first establish national credit frameworks that describe the national VET qualification studies and then assign these qualifications to each NQF and the EQF. This is the procedure chosen by France, Germany, Spain and the United Kingdom. In these cases, the advantage lies in the fact that once all the parts are put into place the whole system will be ready to offer the student and qualified professional the possibility to get their small training modules, complete studies and certifications precisely recognised in the partner countries.

Italy has chosen a different approach, assigning current study certificates directly to the EQF. Although it will not be possible to recognise small training modules that are part of complete studies until they manage to put in place their NQF and credit framework, the great advantage is they are already prepared to offer European recognition of their certificates.

EQAVET as a quality assurance framework is still not playing a key role in France, Germany, Italy, Spain and the United Kingdom.

There can be different reasons that explain the slow development of a common European VET policy.

The article “The common vocational training policy in the EEC from 1961 to 1972” (Petrini, 2002) concludes with the question “why, during the first decade of the Community’s life, did the attempts to breathe life into a common vocational training policy fail?” and mentions, among others,

> *[..] There was opposition from Member States reluctant to cede their national powers to the Community in a sector that, however secondary it might seem, in fact involved substantial interests in countries such as Germany and France whose vocational training was highly developed.*
>
> *[..] we see a Commission trying to emerge as an equal partner with the individual nations, one way being its affirmation of its competence in matters of training, as well as in the familiar matters of the funding of common policies, commercial policy, etc. This attempt provoked reactions from some of the Governments, which in turn restricted the scale of the Commission's ambitions. This produced the 'empty chair' policy and a true boycott of the application of the general principles that were to have guided common vocational training policy and the other Commission initiatives in this field.*
>
> *[..] In the course of these events, the weakest party, Italy, succumbed to the hostility of France and Germany, who were obviously reluctant to take on the financial burden of restoring a social balance for Italy or to relinquish their sovereignty in an important sector, in spite of the technicality of many issues, since it would affect the prospects for the lives of their citizens and voters.*
>
> *[..]*
>
> (Petrini, 2002)

In the article "VET Policy Formation and Discourse in EU: a mobile force work" the author supports the idea that the ongoing process of Copenhagen transmits a neoliberal version of the European policies, concentrating on economic issues and subordinating the investments in social aspects to their financial profitability (Cort, 2013, p. 148).

Erasmus+ is financing mobilities across Europe. The requisite to receive Erasmus+ is that these mobilities have to improve, not only the future of the participants, but they have also got to have a direct effect on the community surrounding the financed institution. In the case of VET, this better future is directly linked to the development of the mentioned frameworks: EQF, NQFs, ECVET, ECTS and EQAVET.

To monitor this Erasmus+ VET funding is important to evaluate the impact on the future of our European professionals.

8.2 Monitoring Erasmus+ VET

The present research has monitored the distribution of Erasmus+ VET KA102/116 funds in France, Germany, Italy, Spain and the United Kingdom. It has taken into account, in every region, the amount of VET students and funds assigned. If a region receives an amount of funds per students equal to the national average its Regional Mobility Efficiency- RME is 100%. If a region receives more than the national average of funds per students the RME will be greater than 100% and vice-versa.

The Students with a Fair Access to Funds-SFAF is the percentage of the VET students in the country that are located in regions with an RME bigger than 50% and smaller than 200%. In other words, SFAF is the percentage of students that have the possibility to receive between half and double the national average of funds per student.

The National Equity is the mathematical tool to determine an objective value for the equity in the national distribution of funds.

Spain with an average Students with a Fair Access to Funds-SFAF of 88% (average National Equity NE 81%) during 2014/2016 and Germany with an average SFAF of 85% (average NE 82%) are offering to more than 4 out of 5 of their students a standard opportunity to benefit from the Erasmus+ KA102 programme. Germany is the country that financed the most projects, 1427, to the most institutions, 823. Germany funded 1.73 projects per institution and 21% of its institutions received funds throughout the period 2014/2016. Spain funded 1.63 projects per institution and 17% of its institutions received funds throughout the period 2014/2016.

The United Kingdom started with a SFAF of 54% in 2014 and increased to 75% in 2015 and 85% in 2016. Its SFAF average was 72% (average NE 77%).

France with an average SFAF of 57% (average NE 72%) and Italy with an average SFAF of 48% (average NE 66%) are offering the lowest opportunity to benefit from the Erasmus+ KA102 programme to their students. Less than half of their students, SFAF France 46%, SFAF Italy 47%, had a standard access to grants in 2016. Italy funded 1.23 projects per institution and only 3% of its institutions received funds throughout the period 2014/2016.

To find the reason for these results it is possible to observe that countries with high SFAF and NE values have three main characteristics:

- *They have few regions with an RME <50%*
- *They have few of their students located in regions with an RME <50%*
- *They have a low average project size*

These characteristics can be found analysing the yearly values and also the complete period averages.

The group with higher SFAF and NE values, Germany and Spain, have, on average, few students in regions with RME<50% (Germany 8,51 % of the students and Spain 7,67 %).

The group with lower SFAF values, France, Italy and the United Kingdom, have a large amount of students in regions with RME<50% (France 37,40 %, Italy 40,24 % and the United Kingdom 24%). Around 2 out of 5 French and Italian students had very poor chances of benefiting from the KA102/116 outcomes. On average, 4% of the Italian students had no possibilities to receive Erasmus+ funds during 2014/2016.

These results seem to indicate that countries with a large amount of students situated in regions with low RME values are countries that can tend to have low SFAF and NE values.

In the case of Italy, with the worst SFAF and NE, the study also points to the fact it has the far largest project budget average, 256.370 €, and also the smallest average amount of funded projects, 99.

This information could indicate that there is a correlation between having a high project budget average, few projects and scoring low in the SFAF and NE value. The project sizes of France and the United Kingdom are, in general, also high and the rest of indicators also show similar results.

There is an exception in the case of the values of the United Kingdom in 2016. This year, the United Kingdom had a high average project size, 196,225 € and also high SFAF, 85%, and NE, 82% values. This can be the result of having a similar average size of project in each of the regions. The minimum regional average project size was 109,600 € in the East of England and the maximum, 284,002 €, London. Although the SFAF and NE values were high, the negative part was that there were only 105 projects funded in the United Kingdom during 2016.

Comparing the national SFAF and NE values with the description of the VET studies and the situation of the European frameworks (EQF, NQFs, ECVET, ECTS, EQAVET) in France, Germany, Italy, Spain and the United Kingdom it is not possible to establish a direct relation.

Autonomy in education could help regions to apply for Erasmus+ funds, but this statement is not always confirmed with the results:

In the cases of France, Germany and Spain it would be possible to establish this relation: Spain and Germany, the countries that best perform in SFAF and NE, have regions (*Comunidades Autónomas* and *Bundesländer*) with more autonomy in education than the regions in France.

Italy and the United Kingdom do not corroborate these results: The devolution of governance in the United Kingdom could justify the good RME values of Northern Ireland, but this is not the case of Scotland and Wales, with lower RMEs. In Italy, Friuli-Venezia Giulia, Sardinia, Sicily, Trentino-Alto Adige, Valle d´Aosta have greater autonomy in education. Of all these Italian regions, only Friuli-Venezia Giulia has a positive RME performance. The rest of these Italian regions are among the worst of all the five European countries.

Inestability in the national education system could also be related to the SFAF and NE values. The changing situation of education in Italy and the United Kingdom could add difficulties for the institutions during the application process and justify low values in the funding indicators. But France was not undergoing major structural reforms during the analysed period and its performance was not outstanding either.

8.3 Erasmus+ VET: Recommendations

According to the present research it is important to minimise the amount of regions with low RMEs and decrease the national average project size. A solution could be to help small VET institutions and stakeholders with the application procedure and foster their participation in the application process, increasing the overall amount and quality of small projects. These actions should be primarily targeted at regions with low RMEs, to increase the participation of their institutions.

To correct low SFAF values, another point to tackle is the project examination process. The national Erasmus+ agencies coordinate the evaluation process, using the rules given by the European Erasmus+ Agency. These rules define the points given to the relevance, quality of the project design, and its impact and dissemination, but do not make any clear difference between projects presented by the different size of the stakeholders. Small VET colleges and large regional institutions, for example, compete under the same rules, but with a completely different set of resources. The application procedure could take this situation into account: For example, assigning different weights to the projects depending on the type and/or size of the institutions or reserving a percentage of the total budget to guarantee the funding of small projects.

8.4 Monitoring Erasmus+: Recommendations

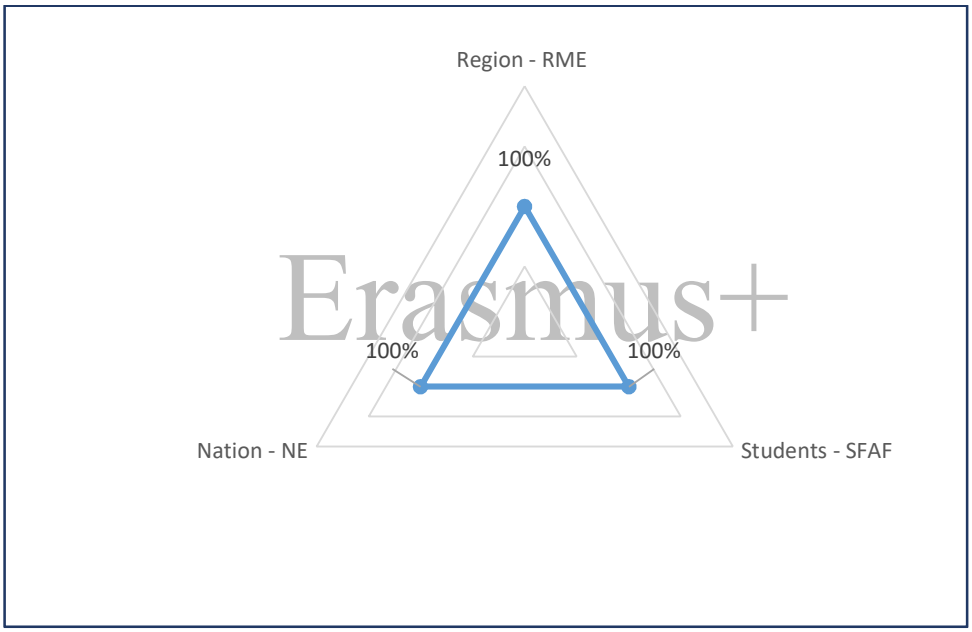
8.4.1 RME, SFAF and NE in all the Key Action 1 programmes

The RME, the SFAF and NE values could be used to analyse the regional, individual (students) and national performance of all of the mobility programmes of the Key Action 1:

- *Mobility project for higher education students and staff*
- *Mobility project for VET learners and staff*
- *Mobility project for school education staff*
- *Mobility project for adult education staff*
- *Mobility project for young people and youth workers*

These are powerful tools that can track the trends of the social impact of the Erasmus+ as a whole.

FIGURE 94 RECOMMENDATION TO USE RME, SFAF AND NE TO MONITOR REGIONAL, STUDENTS´ AND NATIONAL ERASMUS+ FUNDING PERFORMANCE



Source: Compiled by the author

8.4.2 Regional Mobility Efficiency - RME

The current research project has created the Regional Mobility Efficiency - RME value to analyse the VET mobility projects in the regions and nations of France, Germany, Italy, Spain and the United Kingdom.

The RME index gives each region the information on how they are performing in comparison with the other regions of their nation. It can be used to determine if in a particular year, the region has had an average performance and it can also be used to monitor the performance comparing the results from one year to the next. The RME index helps to picture the national regional results of every Erasmus+ Key Action 1 call and is a tool that monitors future trends.

The national Erasmus+ Agencies can use the RME index to discover regions that are performing best and use their best practices to help the regions that are performing worse in their RME index and rescue those disadvantaged students that have less opportunities to receive funds to help them benefit from the Key Action 1 outcomes.

8.4.3 Students with a Fair Access to Funds – SFAF

The Students with a Fair Access to Funds - SFAF offers a direct picture of how many students are benefiting from the Erasmus+ programme and can help to compare the performance of the funding procedures in the different countries.

8.4.4 National Equity - NE

The National Equity values indicate the overall national Erasmus+ funding performance in terms of equity. This indicator can be used to calculate the equity of the funding perfomance of all the nations participating in the Erasmus+ programme in all of the projects´ calls of the Key Action 1.

8.4.5 A European panel to monitor Erasmus+

Using a unified database with the regional population of general education, adult education and VET students in every one of the countries participating in Erasmus+ it would be possible to calculate all the RMEs and thus the SFAF and National Equity for the Erasmus+ Europe as a whole.

A European panel with the regional RMEs and the SFAF and NE values of each nation could picture and monitor trends in terms of equity. The ideal would be that every nation and Europe as a whole could reach a SFAF and NE of 100% by the end of the Erasmus+ programme in 2020 in all the subactions of Key Action 1.

This European panel could use the proposed Erasmus+ Key Indicators to get a broader insight of the evolution of the funding procedures (see Table 4 Monitoring Erasmus+. Key indicators).

8.5 Study limitations

8.5.1 Limited resources

Vocational Education and Training is an area of education that has not been frequently studied. The amount of research in VET is not comparable to the quantity of investigations found in primary and secondary general education.

The action programme Erasmus has been studied and is continuously monitored in the case of Higher Education, but the references to the mobility of VET students is scarce, not only during the current Erasmus+, but also during the previous Leonardo and Lifelong Learning programmes.

8.5.2 Heterogeneous student information

At the moment of the study there was no unique, updated database that included the detailed information of how many VET students were registered in each of the studied regions. Eurostat offered some national values, but did not offer precise values of these types of students at NUTS 2 regional level.

The databases of VET students that were used were the official sources provided by each country to indicate which are their VET students. The different national databases use different criteria to include VET students. For example, the United Kingdom includes in their database part-time VET students and offers an arbitrary conversion rate to figure out how many "full-time" students do each part-time student amount to.

The national databases that were used had been updated at different times and none of them had information of the amount of students during 2015/2016 and 2016/2017. The funding call 2016 will have effect during the academic year 2016/2017, after the present research is closed.

To take into account this problem the mathematical tools do not use absolute figures and the precision of the results avoids decimals. The RME index establishes relative comparisons, producing values between 0% and 600% that indicate that a specific region is performing better than others, without going into the exact details. SFAF and National Equity are values between 0% and 100% that transmit the overall funds distribution performance of a country in terms of equity. These SFAF and NE values have been used to establish groups of countries, but the exact values have not been used to produce the conclusions.

8.5.3 Changing VET realities

During the period 2014-2016 the different frameworks have not only developed in the expected direction, but, in some cases, have made major changes.

Italy and the United Kingdom are undergoing major modifications in their education systems, also in their VET studies.

England, Wales and Northern Ireland implemented a new NQF, the Regulated Qualifications Framework, at the end of 2015.

France reorganised their regions in January 2016, joining some of the previously existing ones. As this reorganisation took place just before the deadline of call 2016 it was not taken into account in the calculation of the French RMEs, but it should be considered in future research.

8.6 Future research

This study has discovered different areas that are interesting to analyse further. I personally think it is important to discover how are the regions approaching Erasmus+, who is involved in the funding procedures, is Erasmus+ actually helping disfavoured students and if we are tackling the Horizon 2020 targets.

The next paragraphs describe the importance of these points and propose research routes.

8.6.1 Regional procedures

The present research has discovered that some regions are performing better that others, receiving more funds. Why? Are the public administrations in these regions helping their institutions with the application process and/or the management of the mobilities projects? Are the regional administrations leading consortia and/or big regional projects?

Which are the similarities between regions with high RMEs? And the differences with low RME regions? It would be important to list the best practices.

In the United Kingdom 2016 the SFAF and NE values were high with only a small amount of big national projects. Did those big national projects equally distribute the funds in their regions or did the money stay in the area of influence of the funded institutions?

8.6.2 Key individuals and stakeholders

Who is preparing the application documents? Who are the people involved in the management of the mobility projects? What are their working conditions? Is there a relation between the working conditions of these people and the project outcomes?

How do the different stakeholders cooperate in the mobility projects? How are the companies, colleges and public administrations collaborating? Which is the role of the

intermediary partners? How are the logistic issues (accommodation, travel, language and cultural courses) been solved?

Are the institutions benefiting from Erasmus+? Are these mobility projects part of their mid-term internalisation plans?

8.6.3 Equity in Erasmus+

The study/training mobility period completed by a citizen abroad has a cost that not only includes the travel and accommodation expenses. Participants with a family and/or a mortgage in their home country have to take into account the mobility period will be, commonly, a time with no extra income.

The amount every National Agency assigns to each mobility is different from one country to the other. Some countries or regions offer the participants only the Erasmus+ funds, other add an extra amount. In some cases, this extra amount is a flat rate for all the students, in some cases these extra amounts are for students that fulfill specific requirements (low income, language level, academic excellence, …)

There are no European defined rules that specify how these extra funds are allocated. These extra funds are not equal in all the regions of the same country. These rules also change from one year to other. For example, a mobility student from Madrid might be receiving a different amount from a student from Andalucia. Also, this same student from Madrid might be receiving a different amount depending on the year when the mobility is undertaken.

This means there can be great differences in the amounts received by each student. It is necessary to picture all of these different amounts and analyse their effects.

Is Erasmus+ a tool that helps disfavoured groups or are the participants that take part in these mobilities, students that would also take part in mobilities without the extra Erasmus+ funding?

8.6.4 European Horizon 2020 aims

The European Horizon 2020 focuses on the knowledge-based economy and aims to (EUROPEAN COMMISSION, 2010):

- *Prepare 40% of the European population (30 – 34 years old) to hold a Higher Education qualification.*
- *Reduce early school-leaving to 10%*
- *Foster student mobility up to 20% in Higher Education and 6% in Initial Vocational Education and Training*

Erasmus+ intends to demonstrate that it is better to invest at a European rather than at a national level and proposes to focus on the people, institutions and systems, creating transnational synergies.

These aims are taken into account by the external evaluators at the moment of assigning the points to award the funds to the mobility projects. An application receives more points for relevance if it tackles youth employment. But there is not effective feedback depending on the project final results: the institution does not have to return any funds if it did not manage an employment for its young students.

Are the Erasmus+ funds producing the Horizon 2020 outcomes?

The future of the European Union depends on managing to create "… constant improvements of the living and working conditions of their people" Treaty of Rome (EEC, 1957).

ANNEXES

9. Indicators and Descriptors

TABLE 97 FRANCE - EQARF QUALITY INDICATORS

: #	Indicators	Organization(s)	Observations
1	The share of VET providers applying a quality assurance system that reflects the CQAF	Ministry of Education, National Council for Lifelong Vocational Training	Whilst CQAF has been promoted in France, it is not clear at this stage until what extent its implementation is monitored.
2	The level of investment in the training of trainers	Ministry for Education, National Council for Lifelong Vocational Training	The recruitment of teachers in the civil service and public sector, depends on the needs of the various professional fields and branches, and is usually by competitive examination. However, it is not evident if this particular indicator is being used.
3	Participation rates in initial VET and lifelong learning	Ministry of Education, National Council for Lifelong Vocational Training	It is also at this stage unclear, if this indicator is being used for Quality Assurance purposes in the VET system. Nevertheless, as for previous indicators, Pole Emploi has access to data on the number and percentage rates of people in IVET and CVET, as well as the National Council for Lifelong Vocational Training, provider of training programmes. Statistical data for this indicator, on the number and percentage of people concerned, are provided by the French National Institute for Statistics and Economic Studies.
4	Successful completion of training	Ministry of Education, National Council for Lifelong Vocational Training	The indicator on successful completion of training is under the responsibility of the Ministry of Education and National Council for Lifelong Vocational Training. Both institutions have the ability to make an accurate assessment to measure this indicator through their vast contact network of institutions and organizations at all territorial levels. However, it is at this stage still unclear, how this indicator is currently being used.
5	Destination of trainees six months after completing their training	Ministry of Education, National Council for Lifelong Vocational Training	It is not clear whether this indicator is being used for quality assurance purposes in the VET system, however, Social partners and enterprises, in connection to the National Council for Lifelong Vocational Training assess the success and failures on people accessing the job market after completing training schemes.
6	The use of the acquired skills in the workplace	Ministry of Education, National Council for Lifelong Vocational Training	Acquired skills in the workplace are also a task evaluated by the National Council for Lifelong Vocational Training, in cooperation with the Ministry of Education, being the Ministry responsible for the elaboration and implementation of training schemes and structures. It is however not clear, if this indicator is being used for quality assurance in the VET system.

7	The levels of unemployment according to different groups in society	Ministry of Education, National Council for Lifelong Vocational Training	The level of unemployment of different groups is statistical data provided by the French National Institute for Statistics and Economic Studies and by EUROSTAT. How to tackle these different groups through VET and social inclusion relies on Pôle Emploi and the DSS, the French Social Security Directorate that manages all organizations, including independent professions or special regimes (1).
8	Prevalence of vulnerable groups in the VET system	Ministry of Education, National Council for Lifelong Vocational Training	The prevalence of vulnerable groups in the VET system is an indicator, that the Pôle Emploi assesses through the number of people in difficult situations (e.g. long term unemployment) attending their services, as well as the National Council for Lifelong Vocational Training, provider of training programmes. As this is an indicator on social issues, statistical data on the number and percentage of people from different vulnerable groups are provided by the French National Institute for Statistics and Economic Studies. However, it is again not clear if this indicator is being used for quality assurance in the French VET system.
9	The existence of mechanisms to relate developments in labour market to VET systems		It is not clear at this stage, whether this information is being measured for quality assurance purposes for VET.
10	The existence of schemes to promote better access	Ministry of Education, National Council for Lifelong Vocational Training	According to a recent CEDEFOP study (2) the following indicators are being considered: for apprenticeships weight given to apprenticeships as part of the level of education, the system or in large enterprises; dropout rate, and rate of recognised qualification. At this stage, it is not clear whether such indicators have been implemented.

The table summarises identified evidence that relates any indicators used at national level to the ten indicators proposed in the EQARF recommendation (EQAVET Secretariat, 2015 FR b).

Note about the indicators # 2 (The level of investment in the training of trainers): In France, public education teachers working in vocational training receive training according to the same principles as their counterparts in general education, within IUFMs. The Guidance and Planning Law for the Future of the school of 25 April 2005 sets out provisions for instructor training. This training programme will be based clearly on the principles of job study and continuity. It combines theoretical approaches, practical experience of the profession to which the interns aspire and openness to the economic and social environment. (3)

(1) http://www.securite-sociale.fr/institutions/dss/dss.htm
(2) Assuring the quality of VET systems by defining expected outcomes. A cross country analysis in seven Member States, CEDEFOP Panorama Series 158, 2008.
(3) Policy Report on VET, France 2008, Progress in the Policy Priority Areas for VET

Source: (EQAVET Secretariat, 2015 FR b).

TABLE 98 MAIN NQF LEVEL DESCRIPTOR ELEMENTS IN GERMANY

Level indicator			
Structure of requirements			
Professional competence		**Personal competence**	
Knowledge	***Skills***	***Social competence***	***Autonomy***
Depth and breadth	Instrumental and systemic skills, judgment	Team/leadership skills, involvement and communication	Autonomous responsibility/responsibility, reflectiveness

Descriptors for levels 1-8 (AK DQR, 2011 B)

	Professional competence		**Personal competence**	
Level 1	***Knowledge***	***Skills***	***Social competence***	***Autonomy***
Be in possession of competences for the fulfilment of simple requirements within a clear and stably structured field of study or work. Fulfilment of tasks takes place under supervision.				
	Be in possession of elementary general knowledge. Have an initial insight into a field of study or work.	Be in possession of cognitive and practical skills required to carry out simple tasks in accordance with stipulated rules and to evaluate the results of such tasks. Establish elementary correlations.	Learn or work together with others, obtain and exchange information verbally and in writing.	Learn or work under supervision. Appraise own actions and the actions of others and accept learning guidance.

	Professional competence		**Personal competence**	
Level 2	***Knowledge***	***Skills***	***Social competence***	***Autonomy***
Be in possession of competences for the professional fulfilment of basic requirements within a clear and stably structured field of study or work. Fulfilment of tasks takes place largely under supervisión.				
	Be in possession of basic general knowledge and basic professional knowledge with a field of study or work.	Be in possession of basic cognitive and practical skills required to carry out tasks within a field of study or work, evaluate the results of such tasks in accordance with stipulated criteria and establish correlations.	Work within a group. Accept and express general feedback and criticism. Act and react in accordance with the given situation with regard to verbal and written communication.	Learn or work in a responsible manner and largely under supervision within familiar and stable contexts. Appraise own actions and the actions of others. Use stipulated learning guides and request learning guidance.

	Professional competence		**Personal competence**	
Level 3	***Knowledge***	***Skills***	***Social competence***	***Autonomy***
Be in possession of competences for the autonomous fulfillment of technical requirements within a field of study or field of occupational activity which remains clear while being openly structured in some areas.				
	Be in possession of extended general knowledge or extended professional knowledge within a field of study or field of occupational activity.	Be in possession of a spectrum of cognitive and practical skills for the planning and processing of technical tasks within a field of study or field of occupational activity. Evaluate results in accordance with criteria which are largely stipulated, provide simple transfers of methods and results.	Work within a group and occasionally offer support. Help shape the learning or working environment, present processes and results to the appropriate recipients of such information.	Learn or work autonomously and responsibly including within contexts which are less familiar. Appraise own actions and the actions of others. Request learning guidance and select various learning aids.

	Professional competence		**Personal competence**	
Level 4	***Knowledge***	***Skills***	***Social competence***	***Autonomy***
Be in possession of competences for the autonomous planning and processing of technical tasks assigned within a comprehensive field of study or field of occupational activity subject to change.				
	Be in possession of deeper general knowledge or theoretical professional knowledge within a field of study or field of occupational activity.	Be in possession of a broad spectrum of cognitive and practical skills which facilitate autonomous preparation of tasks and problem-solving and the evaluation of work results and processes according consideration to alternative courses of action and reciprocal effects with neighboring areas. Provide transfers of methods and solutions	Help shape the work within a group and the learning or working environment of such a group and offer continuous support. Justify processes and results. Provide comprehensive communication on facts and circumstances	Set own learning and work objectives, reflect on and assess such objectives and take responsibility for them

	Professional competence		**Personal competence**	
Level 5	***Knowledge***	***Skills***	***Social competence***	***Autonomy***
Be in possession of competences for the autonomous planning and processing of comprehensive technical tasks assigned within a complex and specialised field of study or field of occupational activity subject to change.				
	Be in possession of integrated professional knowledge within a field of study or integrated occupational knowledge within a field of activity. This also includes deeper, theoretical professional knowledge. Be familiar with the scope and limitations of the field of study or field of occupational activity. field of study or field of occupational activity.	Be in possession of an extremely broad spectrum of specialised, cognitive and practical skills. Plan work processes across work areas and evaluate such processes according comprehensive consideration to alternative courses of action and reciprocal effects with neighbouring areas. Provide comprehensive transfers of methods and solutions.	Plan and structure work processes in a cooperative manner, including within heterogeneous groups, instruct others and provide well-founded learning guidance. Present complex facts and circumstances extending across professional areas in a targeted manner to the appropriate recipients of such information. Act in an anticipatory manner in considering the interests and requirements of recipients.	Reflect on and assess own learning objectives and learning objectives set externally, undertake self-directed pursuit of and assume responsibility for such objectives, draw consequences for work processes within the team.

	Professional competence		**Personal competence**	
Level 6	***Knowledge***	***Skills***	***Social competence***	***Autonomy***
Be in possession of competences for the planning, the processing and the evaluating of comprehensive technical tasks and problems set and be in possession of competences for autonomous management of processes within subareas of a scientific subject or within a field of occupational activity. The structure of requirements is characterised by complexity and frequent changes.				
	Be in possession of broad and integrated knowledge including knowledge of basic scientific principles and the practical application of a scientific subject as well as a critical understanding of the most important theories and methods (corresponding to level 1 – Bachelor level – of the qualifications framework for German higher education qualifications) or be in possession of broad and integrated occupational knowledge including current technical developments. Be in possession of knowledge for the further development of a scientific subject or of a field of occupational activity. Be in possession of relevant knowledge at interfaces to other areas.	Be in possession of an extremely broad spectrum of methods for the processing of complex problems within a scientific subject (corresponding to level 1 – Bachelor level – of the qualifications framework for German higher education qualifications), further fields of study **or** field of occupational activity. Draw up new solutions and evaluate such solutions including according consideration to various criteria even in circumstances where requirements are subject to frequent change.	Assume responsibility in working within expert teams **or** show responsibility in leading (This encompasses companies, government authorities or non-profit making organisations.) groups or organisations. Instruct the technical development of others and act in an anticipatory manner in dealing with problems within the team. Present experts with arguments for and solutions to complex professionally related problems and work in conjunction with such experts on further development.	Define, reflect on and assess objectives for learning and work processes and structure learning and work processes autonomously and sustainably.

	Professional competence		**Personal competence**	
Level 7	***Knowledge***	***Skills***	***Social competence***	***Autonomy***
Be in possession of competences for the processing of new and complex professional tasks and problems set and be in possession of competences for autonomous management of processes within a scientific subject or within a strategically oriented field of occupational activity. The structure of requirements is characterised by frequent and unpredictable changes.				
	Be in possession of comprehensive, detailed, specialist and state-of-the art knowledge in a scientific subject (corresponding to level 2 – Master level – of the qualifications framework for German higher education qualifications) or be in possession of comprehensive occupational knowledge in a strategically oriented field of occupational activity. Be in possession of extended knowledge in adjoining areas.	Be in possession of specialised technical or design concept skills relating to the solution of strategic problems in a scientific subject (corresponding to level 2 – Master level – of the qualifications framework for German higher education qualifications) or in a field of occupational activity. Consider alternatives even in circumstances where information is incomplete. Develop and use new ideas or procedures and assess such ideas and procedures according consideration to various evaluation criteria	Assume responsibility for leading groups or organisations within the scope of complex tasks set and present the results of the work of such groups or organisations. Promote the technical development of others in a targeted manner. Lead divisionally specific and cross-divisional debates.	Define objectives for new applications or research- oriented tasks reflecting on possible societal, economic and cultural implications, deploy appropriate means and tap autonomously into own knowledge for the purpose.

	Professional competence		**Personal competence**	
Level 8	***Knowledge***	***Skills***	***Social competence***	***Autonomy***
Be in possession of competences for obtaining research findings in a scientific subject or for the development of innovative solutions and procedures within a field of occupational activity. The structure of requirements is characterised by novel and unclear problem situations.				
	Be in possession of comprehensive, specialised, systematic state-of-the art knowledge in a research discipline and contribute towards the expansion of knowledge within the specialist discipline (corresponding to level 3 – Doctorate level – of the qualifications framework for German higher education qualifications) or be in possession of comprehensive occupational knowledge in a strategically and innovation oriented field of occupational activity. Be in possession of appropriate knowledge at the interfaces to adjoining areas.	Be in possession of comprehensively developed skills relating to the identification and solution of novel problems set in the areas of research, development or innovation within a specialised scientific subject (corresponding to level 3 – Doctorate level – of the qualifications framework for German higher education qualifications) or in a field of occupational activity. Also design, implement, manage, reflect on and evaluate innovative processes including in cross-activity areas. Evaluate new ideas and procedures.	Lead groups or organisations from a position of responsibility in complex or interdisciplinary tasks while activating the areas of potential within such groups or organisations. Promote the professional development of others in a targeted and sustained manner. Lead cross-specialist debates and introduce innovative contributions to specialist professional discussions including in international contexts.	Define objectives for new complex applications or research-oriented tasks reflecting on possible societal, economic and cultural implications, select appropriate means and develop new ideas and processes

Source: (CEDEFOP, 2013 NQF).

TABLE 99 GERMANY - EQAVET INDICATORS

#	Indicators	Organization(s)	Observations
1	No 1 Relevance of quality assurance systems for VET providers: (a) share of VET providers applying internal quality assurance systems defined by law/at own initiative (b) share of accredited VET providers	BMBF, BIBB, BMWi, Federal/Länder experts	Whilst CQAF has been promoted in Germany by BIBB, it is not clear whether BIBB uses this as an indicator for quality assurance. [..]
2	No 2 Investment in training of teachers and trainers: (a) share of teachers and trainers participating in further training (b) amount of funds invested	---	Whilst at this stage it is not evident that this is being used as an indicator, the role of the BIBB, which is responsible for the progressive development of VET in Germany, may be important in the implementation of such an indicator.
3	No 3 Participation rate in VET programmes: Number of participants in VET programmes, according to the type of programme and the individual criteria	BIBB, BA	[..]
4	No 4 Completion rate in VET programmes: Number of persons having successfully completed/abandoned VET programmes, according to the type of programme and the individual criteria	BIBB, BA	[..]
5	No 5 Placement rate in VET programmes: (a) destination of VET learners at a designated point in time after completion of training, according to the type of programme and the individual criteria (b) share of employed learners at a designated point in time after completion of training, according to the type of programme and the individual criteria	BIBB, BA	[..]

6	No 6 Utilisation of acquired skills at the workplace: (a) information on occupation obtained by individuals after completion of training, according to type of training and individual criteria (b) satisfaction rate of individuals and employers with acquired skills/competences		At this stage, it is not clear whether this is being used as a quality assurance indicator.
7	No 7 Unemployment rate according to individual criteria	IAB, BA, BIBB; BMBF	Data are collected through survey and are available at the provider's level. Although IAB collects data, it is reasonable to say the BMBF uses this indicator to improve quality.
8	No 8 Prevalence of vulnerable groups: (a) percentage of participants in VET classified as disadvantaged groups (in a defined region or catchment area) according to age and gender (b) success rate of disadvantaged groups according to age and gender	BMBF, BA and BIBB	Data are collected through survey and are available at the provider's level. BA collects data and BIBB uses this to improve quality. A programme has been launched since 2008 by BMBF to increase training opportunities for vulnerable groups. [..]
9	No 9 Mechanisms to identify training needs in the labour market: (a) information on mechanisms set up to identify changing demands at different levels (b) evidence of their effectiveness	BIBB	A programme has been launched since 1999 to identify the skills needs. BMBF collects data and information and uses this to improve quality as evidenced by initiatives such as the FreQueNz webpage, which was launched to identify future skills needs. Also a list of facilities has been designed to improve institutions and organizations to meet appropriate changes in VET. See further observations following this table.
10	No 10 Schemes used to promote better access to VET: (a) information on existing schemes at different levels (b) evidence of their effectiveness	BMBF	Two task forces have been appointed to promote better access to VET.

Source: (EQAVET Secretariat, 2015 DE B).

TABLE 100 ITALY - EQAVET INDICATORS

#	Indicators	Organization/s	Observations
1	No 1 Relevance of quality assurance systems for VET providers: (a) share of VET providers applying internal quality assurance systems defined by law/at own initiative (b) share of accredited VET providers	ISFOL (national reference point)	Data is collected through statistical records, education databases and surveys. Data is available at national level and is being used regionally in certain areas. As regards VET training providers, they are all accredited at regional level. As regards VET schools, a new national evaluation system was approved in March 2013. DATA SOURCE: Ministry of Education – Ministry of Labour - Regions
2	No 2 Investment in training of teachers and trainers: (a) share of teachers and trainers participating in further training (b) amount of funds invested	ISFOL (national reference point)	Some organisations (e.g. large companies or public administration departments with permanent internal training services) can decide to participate or invest directly in the continuing training of trainers. In recent years, many enterprises and departments of public administration have increased continuing training due to the diffusion of quality management systems. The data on the level of investment in training of trainers is collected through statistical records and education data bases for teachers, and through surveys for trainers. The data is available at national, regional and provider level. As regards trainers, the main data source comes from the accreditation system at regional level as each two/three years VET providers must demonstrate their investment in training staff in order to maintain the accreditation. As regards teachers the main data source is the Ministry of Education.
3	No 3 Participation rate in VET programmes: Number of participants in VET programmes, according to the type of programme and the individual criteria	ISFOL (national reference point)	The participation rates in IVET and CVET are primarily handled by ISFOL, as this organism is the main contact point to provide through its network of partner organisations and institutions, all VET activities in the country. Statistical data provided by ISTAT and EUROSTAT is also important. Statistical records and education data bases area used for IVET and surveys for CVET. For IVET, this focuses on individual participants, while for CVET, the rates of population are used. Data source: Ministry of Education and Ministry of Labour A relevant publication on the issue is: MLPS - ISFOL, *I percorsi di istruzione e Formazione professionale nell'anno della sussidiarietà a.f. 2011/2012.*

4	No 4 Completion rate in VET programmes: Number of persons having successfully completed/abandoned VET programmes, according to the type of programme and the individual criteria	ISFOL (national reference point)	This is used for Steering and monitoring purposes, it is collected through surveys carried out at regional level, and is available at national and regional level. Data source: Ministry of Education and Ministry of Labour Data are also processed by ISFOL on Ministry of Labour – Regions data sources.
5	No 5 Placement rate in VET programmes: (a) destination of VET learners at a designated point in time after completion of training, according to the type of programme and the individual criteria (b) share of employed learners at a designated point in time after completion of training, according to the type of programme and the individual criteria	ISFOL (national reference point)	The destination of trainees after completion of training programmes is measured through surveys carried out at regional level. It is used for planning, target setting, steering, monitoring and efficiency purposes. Data source: ISFOL Relevant publication on the issue is: ISFOL "Gli esiti formative e occupazionali dei giovani qualificati nei percorsi triennali di istruzione e formazione professionale 2011" Valeria Scalmato ISFOL " Rapporto orientamento 2011 – Sfide e obiettivi per un nuovo Mercato del Lavoro" giugno 2012
6	No 6 Utilisation of acquired skills at the workplace: (a) information on occupation obtained by individuals after completion of training, according to type of training and individual criteria (b) satisfaction rate of individuals and employers with acquired skills/competences		Data source: Unioncamere – Ministry of Labour, Sistema informativo Excelsior Source: Rapporto Excelsior 2012 UNIONCAMERE, Sistema Informativo Excelsior 2011. La domanda di formazione e di professioni delle imprese, Novembre 2011.

7	No 7 Unemployment rate according to individual criteria	ISFOL (national reference point)	ISTAT is responsible for collecting and providing the data. It is used for steering and monitoring purposes and is available at national level. Relevant publication: ISTAT, Secondo Rapporto sulla Coesione sociale, marzo, 2012. ISTAT, Rapporto annuale 2012. La situazione del Paese, maggio 2012.
8	No 8 Prevalence of vulnerable groups: (a) percentage of participants in VET classified as disadvantaged groups (in a defined region or catchment area) according to age and gender (b) success rate of disadvantaged groups according to age and gender	ISFOL (national reference point)	As for the prevalence of vulnerable groups, this is measured through statistical records and education databases. As far as the definition of these groups is concerned, this includes the level of education of individuals. ISFOL uses this for planning and target setting, and for steering and monitoring. Data source: Ministry of Education, Regions
9	No 9 Mechanisms to identify training needs in the labour market: (a) information on mechanisms set up to identify changing demands at different levels (b) evidence of their effectiveness		Data source: ISTAT Unioncamere – Ministry of Labour, Sistema informativo Excelsior Relevant publication on the issue is: Unioncamere “I fabbisogni occupazionali delle imprese dell’industria e dei servizi – anno 2013” Sistema informativo Excelsior 2013 – “La domanda di lavoro delle imprese dell’industria e dei servizi”
10	No 10 Schemes used to promote better access to VET: (a) information on existing schemes at different levels (b) evidence of their effectiveness		No evidence was found that this is used as an indicator for quality assurance.

The table summarizes evidence identified in order to relate some indicators used at national level to the ten indicators proposed within the EQAVET recommendation

Source: (EQAVET Secretariat, 2015 IT B).

TABLE 101 SPAIN, MAIN NQF LEVEL DESCRIPTOR ELEMENTS

Knowledge described as theoretical and/or practical:	**Skills and abilities** described as cognitive and practical:	**Competence** described as autonomy and responsibility:
- to have or understand knowledge.	- to apply knowledge; - ability to communicate in various languages; - analysis ability.	- learning ability; - attitudes

Source: (CEDEFOP, 2013 NQF).

TABLE 102 SPAIN, DESCRIPTORS FOR NQF LEVELS 1-8

Knowledge		Skills and abilities	Competence
Level 1	- Enough basic knowledge to meet the needs arisen in everyday life.	- To read, write and apply the basic calculus techniques. - Basic skills necessary to carry out ordinary tasks. - Basic communication that makes it possible to express and understand simple messages and to manage everyday situations. - Analysis of the consequences of one's own actions in simple contexts.	- Work or study directly supervised in a structured context. - Adequate attitudes to manage everyday life, as well as to understand their environment.
Level 2	- Basic knowledge in a work field or in different study areas.	- Basic knowledge application to carry out simple tasks in a field of work or in everyday life. - Skills to solve simple problems in a specific work area. - Communication of knowledge, abilities, feelings and activities in simple contexts. - Basic use of new technological resources and communication in a field of work or in everyday life. - Introduction to communication by means of different artistic representations and expressions. - Analysis of the consequences of one's and others' actions in simple contexts.	- Supervised work or study with a certain degree of autonomy. - Responsibility regarding everyday situations that demand some analysis and assessment ability. - Effective attitude in all areas of personality and in relationships with others that makes coexistence easier and which is against violence and any kind of prejudices.
Level 3	-General knowledge of facts, principles, processes and concepts in a work field or in different study areas, mainly linguistic, mathematical, natural environment, social, cultural and artistic.	- Application of general knowledge and the necessary skills to carry out tasks and to solve problems selecting and applying methods, tools, materials and general information in specific contexts. - Communication of knowledge, abilities, feelings and activities in relatively simple contexts. - Basic use of new technological resources and in communication through different artistic representations and expressions in a work or study field. - Analysis and resolution of problems in a concrete context	- Individual or team work or study taking responsibilities. - Adapting own behaviour to the circumstances in a responsible way to solve problems and to understand others.

Level 4	- Knowledge in wide contexts in various study areas or in a specialised professional field.	- Knowledge application to carry out a set of activities in defined and generally previewed contexts. - Skills to resolve generally predictable problems in the knowledge areas or a field of work. - Supervision of other people's everyday work taking some responsibility for the evaluation and improvement of work or study activities. - To communicate knowledge, abilities, feelings and activities correctly in generally predictable contexts through different resources and forms of expression. - Analysis of the consequences of one's and others' actions in generally predictable contexts. - Analysis of concrete information needed to assess and solve problems within their own study or professional field. - Finding creative solutions for problems in a study or professional field.	- Self-management of education in a study or professional field, with maturity to improve learning and training skills at higher levels. - Responsible attitudes towards education that will allow them to realise the value of new possibilities and of how to carry out activities independently. - Responsible attitude towards other people's work, enabling them critically to value new possibilities to make improvements. - Responsible attitude regarding the application of workplace risk prevention, their own and people's safety, work quality and environmental protection where professional activity is carried out.
Level 5	- Specialised knowledge in a study or professional field, with critical comprehension for transferring, integrating and innovating knowledge.	- Advanced technological knowledge application and integration when defining and developing both predictable and not predictable working procedures. - Management and supervision of the work techniques and outcomes, carried out by oneself and other people. - To communicate knowledge, abilities, feelings and activities properly in predictable and not predictable contexts. - Correct management of technological resources in a work or study field. - Analysis of the consequences of one's and other's actions in predictable and not predictable contexts. - Analysis of varied and wide information, necessary for evaluating and solving problems within its study or professional field. - Search for creative and innovative solutions when solving problems in a study or professional field.	- Self-management of education in a study or professional field with the aim of making progress to higher training levels or of improving the application of new knowledge. - Autonomy and responsibility for carrying out predictable and unpredictable activities in a professional field, and being in charge of supervising the activities by subordinate people - Responsibility and autonomy so as to implement and supervise workplace risk prevention, people safety, work quality and protection of the environment where the professional activity is carried out.

Level 6	- Specialised and advanced knowledge based on study and/or on the professional experience, including some knowledge in the vanguard of a study or work field.	- Application of knowledge in complex work contexts in a professional way. - Command and innovation qualities, necessary for solving complex and unforeseeable problems in a specialised work or study field. - Management of activities or complex technical or professional projects, assuming responsibilities for taking decisions in unforeseeable work or study contexts. - Communication and transfer of information, ideas, problems and solutions both to a specialised and to a non-specialised audience. - advanced use of technological resources in a specialised work or study field. - preparation, argument defence and problem solutions within their work and study field. - critical comprehension of theories and principles. - synthesis and interpretation of significant data within their work or study field.	- Self-management of training in a professional field, with maturity enough for innovating in its application and making progress in learning and training at higher levels. - Responsible attitude towards work and training, making it possible to assume responsibilities concerning the management of individuals and group professional development.
Level 7	- Highly specialised knowledge in the vanguard of a specific work or study field, laying the foundations of original thought or research.	- Application of achieved knowledge with a high level of creativity and autonomy. - Solution to wide and multidisciplinary problems related to their work or study field. - Solution to research or innovation problems, to develop new knowledge and procedures, and to integrate knowledge in different fields. - Management and change of complex and unforeseeable work or study contexts requiring new strategic approaches. - Conclusions communication and transfer- as well as knowledge and latest thinking supporting them – to specialised and non-specialised audience in a clear and non-ambiguous way.	- Self-management of knowledge application and improvement to the point of being original when developing and implementing ideas and carrying out activities for advancing in the knowledge of a study or professional field. - Responsible attitude towards work and training, making it possible to develop supervision activities as a team in a completely autonomous way. - Ability to assume responsibilities concerning the knowledge development and/or vocational practices and the supervision of teams' strategic performance.

Level 8	- Knowledge at the most advanced point of a study field or a specific study and at the articulation point between different fields. - Methods of advancing the knowledge related to a study or professional field.	- Very advanced use of technological resources in a specialised work or study field. - Analysis and criticism in a specific field and at the point of articulation between different fields. - Integration of knowledge and formulation of complex opinions from incomplete or limited information, including reflections about social and ethical responsibilities linked to their knowledge and opinion application. - Scientific, technical or professional rigor, to conceive, design, put into practice and assume an essential process of knowledge. - Application of the most advanced and specialised techniques, in particular with regard to synthesis and assessment, necessary for solving critical problems in research and/or innovation and for increasing and redefining existing knowledge or vocational practices. - Communication with colleagues, with the academic or professional community as a whole and with society in general about the knowledge fields with a high level of depth and rigor. - Innovative use of technological resources in a specialised work or study field. - Critical analysis, with evaluation and synthesis of new and complex ideas at the highest level.	- Promotion, in academic and professional contexts, of technological, social or cultural advance within a society based on knowledge. - Responsible and creative attitude towards the advance of knowledge, making it possible to develop and carry out activities as a team in an autonomous way. - Authority, innovation, autonomy, essential professional and academic integrity and continuous commitment, authorised according to the development of new ideas or processes in the vanguard of work or study contexts, including research.

Descriptors for levels 1-8 (Draft level descriptors, October 2012).

Source: (CEDEFOP, 2013 NQF).

TABLE 103 SPAIN - EQAVET INDICATORS

#	Indicators	Organization(s)	Observations
1	No 1 Relevance of quality assurance systems for VET providers: (a) share of VET providers applying internal quality assurance systems defined by law/at own initiative (b) share of accredited VET providers	MECS AC (i) EI (1) SPES	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is used for monitoring and is collected through periodical surveys. [..]
2	No 2 Investment in training of teachers and trainers: (a) share of teachers and trainers participating in further training (b) amount of funds invested	MECS	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is used for planning and target setting, being evaluated in financial terms.[..]
3	No 3 Participation rate in VET programmes: Number of participants in VET programmes, according to the type of programme and the individual criteria	MECS (NIEES) SPES	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is used for planning and target setting, as well as monitoring. [..]
4	No 4 Completion rate in VET programmes: Number of persons having successfully completed/abandoned VET programmes, according to the type of programme and the individual criteria	MECS (NIEES) SPES	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is used for monitoring. [..]
5	No 5 Placement rate in VET programmes: (a) destination of VET learners at a designated point in time after completion of training, according to the type of programme and the individual criteria (b) share of employed learners at a designated point in time after completion of training, according to the type of programme and the individual criteria	MECS (NIEES) SPES NIS (2)	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is used for monitoring as well as performance based decision making. [..]

6	No 6 Utilisation of acquired skills at the workplace: (a) information on occupation obtained by individuals after completion of training, according to type of training and individual criteria (b) satisfaction rate of individuals and employers with acquired skills/competences	---	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated this is used for planning and target setting, as well as monitoring through annual surveys. No further information was revealed regarding this indicator at this stage.
7	No 7 Unemployment rate according to individual criteria	MESS (SPES)	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is used for planning and target setting, as well as monitoring. [..]
8	No 8 Prevalence of vulnerable groups: (a) percentage of participants in VET classified as disadvantaged groups (in a defined region or catchment area) according to age and gender (b) success rate of disadvantaged groups according to age and gender	MECS (NIEES) SPES	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is used for planning and target setting, as well as monitoring. [..]
9	No 9 Mechanisms to identify training needs in the labour market: (a) information on mechanisms set up to identify changing demands at different levels (b) evidence of their effectiveness	NIS TFRE	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is used for planning and target setting. [..]
10	No 10 Schemes used to promote better access to VET: (a) information on existing schemes at different levels (b) evidence of their effectiveness	SBE(3)	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is used for planning and target setting as well as monitoring. [..]

(i) Autonomous Community

(1) Education Inspectorate

(2) National Institute of Statistics

(3) State Board of Education

(4) Instituto Nacional de Empleo (2003): Calidad y Formación: Binomio Inseparable

(5) European Quality Management Model for Education Centres: a specific example is the EFQM model used in the Vocational Training Centres attached to the SPES and to the Community of Madrid. The purpose of this model is to implement a system for evaluating and improving training management through: the design of procedures and ad hoc tools, the internal verification of the organization (self-assessment), the planning and development of improvement processes for Training Centre management, and, finally, assessment of the viability of adapting the EFQM.

(6) Q-for is a method used for Quality Evaluation and Certification of training institutes and Consultancy Firms.

(7) Programme for International Student Assessment (www.mepsyd.es/horizontales/iniciativas/evaluacion-sistema-educativo.html)

(8) Acuerdo de Formación Profesional para el Empleo: Fundación Tripartita para la Formación en el Empleo (2006).

(9) Ministerio de la Educación, Cultura y Deporte. Las cifras de la Educación en España. Estadísticas indicadores.

(10) Formación y perfección del profesorado.

(11) Ministerio de Empleo y Seguridad Social: Servicio Público de Empleo Estatal. Memoria.

(12) Observatorio de las Ocupaciones del Servicio Público de Empleo Estatal. Informe del Mercado de Trabajo.

(13) Ministerio de Educación, Cultura y Deporte. Las cifras de la Educación en España. Estadísticas indicadores.

(14) Instituto Nacional de Evaluación Educativa. El Sistema estatal de indicadores de la educación.

(15) Ministerio de Educación, Cultura y Deporte. Encuesta de Transición Educativo-Formativa e Inserción Laboral.

(16) Instituto Nacional de Estadística (www.ine.es)

(17) Fundación Tripartita para la Formación en el Empleo.

Source: (EQAVET Secretariat, 2015 ES B).

TABLE 104 RQF LEVEL DESCRIPTORS - THE UNITED KINGDOM: ENGLAND, NORTHERN IRELAND AND WALES

Level	Knowledge descriptor (the holder…)	Skills descriptor (the holder can…)
Entry 1	Progresses along a continuum that ranges from the most elementary of achievements to beginning to make use of knowledge and/or understanding that relate to the subject or immediate environment.	Progress along a continuum that ranges from the most elementary of achievements to beginning to make use of skills that relate to the subject or the immediate environment.
Entry 2	Has basic knowledge or understanding of a subject and/or can carry out simple, familiar tasks; and Knows the steps needed to complete simple activities.	Carry out simple, familiar tasks and activities. Follow instructions or use rehearsed steps to complete tasks and activities.
Entry 3	Has basic knowledge and understanding to carry out structured tasks and activities in familiar contexts; and Knows and understands the steps needed to complete structured tasks and activities in familiar contexts.	Carry out structured tasks and activities in familiar contexts. Be aware of the consequences of actions for self and others.
L1	Has basic factual knowledge of a subject and/or knowledge of facts, procedures and ideas to complete well-defined routine tasks and address simple problems; and Is aware of aspects of information relevant to the area of study or work.	Use basic cognitive and practical skills to complete well-defined routine tasks and procedures. Select and use relevant information. Identify whether actions have been effective.
L2	Has knowledge and understanding of facts, procedures and ideas in an area of study or field of work to complete well-defined tasks and address straightforward problems. Can interpret relevant information and ideas. Is aware of a range of information that is relevant to the area of study or work.	Select and use relevant cognitive and practical skills to complete well-defined, generally routine tasks and address straightforward problems. Identify, gather and use relevant information to inform actions. Identify how effective actions have been.

L3	Has factual, procedural and theoretical knowledge and understanding of a subject or field of work to complete tasks and address problems that while well-defined, may be complex and non-routine. Can interpret and evaluate relevant information and ideas. Is aware of the nature of the area of study or work. Is aware of different perspectives or approaches within the area of study or work.	Identify, select and use appropriate cognitive and practical skills, methods and procedures to address problems that while well-defined, may be complex and non-routine. Use appropriate investigation to inform actions. Review how effective methods and actions have been.
L4	Has practical, theoretical or technical knowledge and understanding of a subject or field of work to address problems that are well defined but complex and non-routine. Can analyse, interpret and evaluate relevant information and ideas. Is aware of the nature of approximate scope of the area of study or work. Has an informed awareness of different perspectives or approaches within the area of study or work.	Identify, adapt and use appropriate cognitive and practical skills to inform actions and address problems that are complex and non-routine while normally fairly well-defined. Review the effectiveness and appropriateness of methods, actions and results.
L5	Has practical, theoretical or technological knowledge and understanding of a subject or field of work to find ways forward in broadly defined, complex contexts. Can analyse, interpret and evaluate relevant information, concepts and ideas. Is aware of the nature and scope of the area of study or work. Understands different perspectives, approaches or schools of thought and the reasoning behind them.	Determine, adapt and use appropriate methods, cognitive and practical skills to address broadly defined, complex problems. Use relevant research or development to inform actions. Evaluate actions, methods and results.

L6	Has advanced practical, conceptual or technological knowledge and understanding of a subject or field of work to create ways forward in contexts where there are many interacting factors. Understands different perspectives, approaches or schools of thought and the theories that underpin them. Can critically analyse, interpret and evaluate complex information, concepts and ideas.	Determine, refine, adapt and use appropriate methods and advanced cognitive and practical skills to address problems that have limited definition and involve many interacting factors. Use and, where appropriate, design relevant research and development to inform actions. Evaluate actions, methods and results and their implications.
L7	Reformulates and uses practical, conceptual or technological knowledge and understanding of a subject or field of work to create ways forward in contexts where there are many interacting factors. Critically analyses, interprets and evaluates complex information, concepts and theories to produce modified conceptions. Understands the wider contexts in which the area of study or work is located. Understands current developments in the area of study or work. Understands different theoretical and methodological perspectives and how they affect the area of study or work.	Use specialised skills to conceptualise and address problematic situations that involve many interacting factors. Determine and use appropriate methodologies and approaches. Design and undertake research, development or strategic activities to inform or produce change in the area of work or study. Critically evaluate actions, methods and results and their short- and long-term implications.
L8	Develops original practical, conceptual or technological understanding to create ways forward in contexts that lack definition and where there are many complex, interacting factors. Critically analyses, interprets and evaluates complex information, concepts and theories to produce new knowledge and theories. Understands	Use advanced and specialised skills and techniques to conceptualise and address problematic situations that involve many complex, interacting factors. Formulate and use appropriate methodologies and approaches. Initiate, design and undertake research, development or strategic activities that extend or produce significant change in the field of work or study. Critically evaluate

	and reconceptualises the wider contexts in which the field of knowledge or work is located. Extends a field of knowledge or work by contributing original knowledge and thinking. Exercises critical understanding of different theoretical and methodological perspectives and how they affect the field of knowledge or work.	actions, methods and results and their short- and long-term implications for the field of work or knowledge and its wider context.

[..]

3.1 The level descriptors are divided into two categories –

(a) knowledge and understanding; and (b) skills.

3.2 There is a knowledge descriptor and a skills descriptor for each level within the framework. The descriptors apply to all the qualifications we regulate, general and vocational, and so many of the descriptors have an "and/or" construction to indicate their applicability to the knowledge and skills associated with the study of a subject or in preparation for a job or role.

3.3 The level descriptors build on those used within the Qualifications and Credit Framework (QCF) and the European Qualifications Framework (EQF). Levels 4−8 are intended to be consistent with the five levels within the Framework for Higher Education Qualification in England, Wales and Northern Ireland (FHEQ).

3.4 The descriptors set out the generic knowledge and skills associated with the typical holder of a qualification at that level. The level descriptors are framed as outcomes and each category starts with a stem statement ("the holder can…") which then links into the outcomes associated with each level of the framework.

3.5 The descriptors for the knowledge and skills associated with Entry 1 achievement are the exception to this. The Entry 1 descriptors are based on a continuum of achievement which can be used to track and recognise progress towards the achievement of student-centred targets.

3.6 None of the descriptors is intended to point to the process of learning or to specific assessment methods.

[..]

Source: (OFQUAL, 2015).

TABLE 105 SCOTTISH SCQF LEVEL DESCRIPTORS

Level 1	
Knowledge and understanding	SCQF level 1 recognises learning development and achievement that ranges from participation in experiential situations to the achievement of basic tasks, with varying degrees of support.
Practice: applied knowledge, skills and understanding	SCQF level 1 recognises learning development and achievement that ranges from participation in experiential situations to the achievement of basic tasks, with varying degrees of support.
Generic cognitive skills	SCQF level 1 recognises learning development and achievement that ranges from participation in experiential situations to the achievement of basic tasks, with varying degrees of support.
Communications, ICT and numeracy skills	SCQF level 1 recognises learning development and achievement that ranges from participation in experiential situations to the achievement of basic tasks, with varying degrees of support.
Autonomy, accountability and working with others	SCQF level 1 recognises learning development and achievement that ranges from participation in experiential situations to the achievement of basic tasks, with varying degrees of support.

Level 2	
Knowledge and understanding	Demonstrate and/or work with: - basic knowledge; - simple facts and ideas.
Practice: applied knowledge, **skills and understanding**	- Relate knowledge to a few simple everyday contexts with prompting. - Use a few very simple skills. - Carry out, with guidance, a few familiar tasks. - Use, under supervision, basic tools and materials.
Generic cognitive skills	- Use rehearsed stages for solving problems. - Operate in personal and/or everyday contexts. - Take some account, with prompting, of identified consequences of action.
Communications, ICT and numeracy skills	Use simple skills with assistance, for example: - produce and respond to a limited range of very simple written and oral communication in familiar/routine contexts; - carry out a limited range of simple tasks to process and access information; - use a limited range of simple numerical and graphical data in familiar and everyday contexts.
Autonomy, accountability and working with others	- Work alone or with others on simple routine, familiar tasks under frequent directive supervision. - Identify, given simple criteria, some strengths and/or weaknesses of the work.

Level 3	
Knowledge and understanding	Demonstrate and/or work with: - basic knowledge; - simple facts and ideas in, and associated with, a subject, discipline, sector.
Practice: applied knowledge, skills and understanding	- Relate knowledge to personal and/or everyday contexts with some prompting. - Use a few basic, routine skills to undertake familiar and routine tasks. - Complete pre-planned tasks. - Use, with guidance, basic tools and materials safely and effectively.
Generic cognitive skills	- Identify with some prompting a process to deal with a situation or issue. - Operate in familiar contexts using given criteria. - Take account of some identified consequences of action.
Communications, ICT and numeracy skills	Use simple skills, for example: - produce and respond to simple written and oral communication in familiar/routine contexts; - carry out simple tasks to process and access information; - use simple numerical and graphical data in everyday contexts.
Autonomy, accountability and working with others	- Work alone or with others on simple tasks under frequent directive supervision. - Participate in the setting of goals, timelines, etc. - Participate in the review of completed work and the identification of ways of improving practices and processes. - Identify, given simple criteria, own strengths and weaknesses relative to the work.

Level 4	
Knowledge and understanding	Demonstrate and/or work with: - basic knowledge; - some simple facts and ideas in, about, and associated with, a subject/discipline, sector; - knowledge of basic processes, materials and terminology.
Practice: applied knowledge, skills and understanding	- Relate knowledge to personal and/or practical contexts. - Use a few skills to complete straightforward tasks with some non-routine elements. - Prepare for familiar and routine tasks. - Select and use, with guidance, appropriate tools and materials safely and effectively.
Generic cognitive skills	- Use, with guidance, given stages of a process to deal with a problem, situation or issue. - Operate in straightforward contexts. - Identify and/or take account of some of the consequences of action/inaction.
Communications, ICT and numeracy skills	Use some routine skills, for example: - produce and respond to simple but detailed written and oral communication in familiar contexts; - use the basic features of familiar ICT applications to process and obtain information; - use basic numerical and graphical data in straightforward and familiar contexts.
Autonomy, accountability and working with others	- Work alone or with others on tasks with regular, directive supervision. - Contribute to the setting of goals, timelines, etc. - Contribute to the review of completed work and offer suggestions for improving practices and processes. - Identify own strengths and weaknesses relative to the work.

Level 5

Knowledge and understanding	Demonstrate and/or work with: - basic knowledge; - a range of simple facts, ideas and theories in, about, and associated with, a subject, discipline, sector; - knowledge and understanding of basic processes, materials and terminology.
Practice: applied knowledge, skills and understanding	- Relate knowledge and ideas to personal and/or practical contexts. - Use a range of skills associated with the subject, discipline, sector to complete some routine and non-routine tasks. - Plan and organise both familiar and unfamiliar tasks. - Select appropriate tools and materials and use them safely and effectively. - Adjust tools where necessary following safe practices.
Generic cognitive skills	- Use a process to deal with a problem, situation or issue that is straightforward. - Operate in a familiar context, but where there is a need to take account of/or use additional information of different kinds, some of which will be theoretical or hypothetical.
Communications, ICT and numeracy skills	Use a range of routine skills, for example: - produce and respond to detailed written and oral communication in familiar contexts; - use standard ICT applications to process, obtain and combine information; - use a range of numerical and graphical data in routine contexts that may have some non-routine elements.
Autonomy, accountability and working with others	- Work alone or with others on tasks with minimum directive supervision. - Agree goals and responsibilities for self and/or work team. - Take lead responsibility for some tasks. - Show an awareness of own and/or others' roles, responsibilities and requirements in carrying out work and contribute to the evaluation and improvement of practices and processes.

Level 6	
Knowledge and understanding	Demonstrate and/or work with: - an appreciation of the body of knowledge that constitutes a subject, discipline, sector; - a range of knowledge, facts, theories ideas, properties, materials, terminology, practices and techniques about, and associated with, a subject, discipline, sector; - relating the subject, discipline, sector to a range of practical and/or commonplace applications.
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: - in known, practical contexts; - in using some of the basic, routine practices, techniques and/or materials associated with the subjects, discipline, sector; - in exercising these in routine contexts that may have non-routine elements; - in planning how skills will be used to address set situations and/or problems and adapt these as necessary.
Generic cognitive skills	- Obtain, organise and use factual, theoretical and/or hypothetical information in problem-solving. - Make generalisations and predictions. - Draw conclusions and suggest solutions.
Communications, ICT and numeracy skills	Use a wide range of skills, for example: - produce and respond to detailed and relatively complex written and oral communication in both familiar and unfamiliar contexts; - select and use standard ICT applications to process, obtain and combine information; - use a wide range of numerical and graphical data in routine contexts which may have non-routine elements.
Autonomy, accountability and working with others	- Take responsibility for carrying out a range of activities where the overall goal is clear, under non-directive supervision. - Exercise some supervisory responsibility for the work of others and lead established teams in the implementation of routine work within a defined and supervised structure. - Manage limited resources within defined and supervised areas of work. - Take account of roles and responsibilities related to the tasks being carried out and take a significant role in the evaluation of work and the improvement of practices and processes.

Level 7

Knowledge and understanding	Demonstrate and/or work with: - an overall appreciation of the body of knowledge that constitutes a subject/discipline/sector; - knowledge that is embedded in the main theories, concepts and principles of the subject/discipline/sector; - an awareness of the dynamic nature of knowledge and understanding; - an understanding of the difference between explanations based on evidence and/or research and other sources, and of the importance of this difference.
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: - in practical contexts; - in using some of the basic and routine professional skills, techniques, practices and/or materials associated with the subject/discipline/sector; - to practise these in both routine and non-routine contexts.
Generic cognitive skills	- Present and evaluate arguments, information and ideas that are routine to a subject/discipline/sector. - Use a range of approaches to address defined and/or routine problems and issues within familiar contexts.
Communications, ICT and numeracy skills	Use a wide range of routine skills and some advanced skills associated with a subject/discipline/sector, for example: - convey complex ideas in well-structured and coherent form; - use a range of forms of communication effectively in both familiar and unfamiliar contexts; - select and use standard ICT applications to process and obtain a variety of information and data; - use a range of numerical and graphical skills in combination; - use numerical and graphical data to measure progress and achieve goals/targets.
Autonomy, accountability and working with others	- Exercise some initiative and independence in carrying out defined activities at a professional level in practice or in a subject/discipline/sector. - Accept supervision in less familiar areas of work. - Exercise some managerial or supervisory responsibility for the work of others within a defined and supervised structure. - Manage limited resources within defined areas of work. - Take the lead in implementing agreed plans in familiar or defined contexts. - Take account of own and others' roles and responsibilities when carrying out and evaluating tasks. - Work, under guidance, with others to acquire an understanding of current professional practice.

Level 8

Knowledge and understanding	Demonstrate and/or work with: - knowledge of the scope, defining features, and main areas of the subject/discipline/sector; - specialist knowledge in some areas; - a discerning understanding of a defined range of core theories, concepts, principles and terminology; - awareness and understanding of some major current issues and specialisms; - awareness and understanding of research and equivalent scholarly/academic processes.
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: - in using a range of professional skills, techniques, practices and/or materials associated with the subject/discipline/sector, a few of which are advanced and/or complex; - in carrying out routine lines of enquiry, development or investigation into professional level problems and issues; - to adapt routine practices within accepted standards.
Generic cognitive skills	- Undertake critical analysis, evaluation and/or synthesis of ideas, concepts, information and issues that are within the common understandings in a subject/discipline/sector. - Use a range of approaches to formulate and critically evaluate evidence-based solutions/responses to defined and/or routine problems and issues.
Communications, ICT and numeracy skills	Use a wide range of routine skills and some advanced and specialised skills associated with a subject/discipline/sector, for example: - convey complex information to a range of audiences and for a range of purposes; - use a range of standard ICT applications to process and obtain data; - use and evaluate numerical and graphical data to measure progress and achieve goals/targets.
Autonomy, accountability and working with others	- Exercise autonomy and initiative in some activities at a professional level in practice or in a subject/discipline/sector. - Exercise managerial responsibility for the work of others within a defined structure. - Manage resources within defined areas of work. - Take the lead on planning in familiar or defined contexts. - Practise in ways that show awareness of own and others' roles, responsibilities and contributions when carrying out and evaluating tasks. - Work, under guidance, with others to acquire an understanding of current professional practice. - Manage, under guidance, ethical and professional issues in accordance with current professional and/or ethical codes or practices.

Level 9

Knowledge and understanding	Demonstrate and/or work with: - an understanding of the scope and defining features of a subject/discipline/sector, and an integrated knowledge of its main areas and boundaries; - a critical understanding of a range of the principles, principal theories, concepts and terminology of the subject/discipline/sector; - knowledge of one or more specialisms that is informed by forefront developments.
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: - in using a range of the principal professional skills, techniques, practices and/or materials associated with the subject/discipline/sector; - in using a few skills, techniques, practices and/or materials that are specialised and/or advanced; - in practising routine methods of enquiry and/or research; - to practise in a range of professional level contexts that include a degree of unpredictability.
Generic cognitive skills	- Undertake critical analysis, evaluation and/or synthesis of ideas, concepts, information and issues in a subject/discipline/sector. - Identify and analyse routine professional problems and issues. - Draw on a range of sources in making judgements.
Communications, ICT and numeracy skills	Use a wide range of routine skills and some advanced and specialised skills in support of established practices in a subject/discipline/sector, for example: - present or convey, formally and informally, information on standard/mainstream topics in the subject/discipline/sector to a range of audience; - use a range of ICT applications to support and enhance work; - interpret, use and evaluate numerical and graphical data to set and achieve goals/targets.
Autonomy, accountability and working with others	- Exercise autonomy and initiative in some activities at a professional level in practice or in a subject/discipline/sector. - Exercise managerial responsibility for the work of others and for a range of resources. - Practise in ways that show awareness of own and others' roles and responsibilities. - Work, under guidance, with specialist practitioners. - Seeking guidance where appropriate, manage ethical and professional issues in accordance with current professional and/or ethical codes or practices.

Level 10

Knowledge and understanding	Demonstrate and/or work with: - knowledge that covers and integrates most of the principal areas, features, boundaries, terminology and conventions of a subject/discipline/sector; - a critical understanding of the principal theories, concepts and principles; - detailed knowledge and understanding in one or more specialisms, some of which is informed by, or at the forefront of, a subject/discipline/sector; - knowledge and understanding of the ways in which the subject/discipline/sector is developed, including a range of established techniques of enquiry or research methodologies.
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: - in using a wide range of the principal professional skills, techniques, practices and/or materials associated with the subject/discipline/sector; - in using a few skills, techniques, practices and/or materials that are specialised, advanced and/or at the forefront of a subject/discipline/sector; - in executing a defined project of research, development or investigation and in identifying and implementing relevant outcomes; - to practise in a range of professional level contexts that include a degree of unpredictability and/or specialism.
Generic cognitive skills	- Critically identify, define, conceptualise and analyse complex/professional problems and issues. - Offer professional insights, interpretations and solutions to problems and issues. - Demonstrate some originality and creativity in dealing with professional issues. - Critically review and consolidate knowledge, skills, practices and thinking in a subject/discipline/sector. - Make judgements where data/information is limited or comes from a range of sources.
Communications, ICT and numeracy skills	Use a wide range of routine skills and some advanced and specialised skills in support of established practices in a subject/discipline/sector, for example: - present or convey, formally and informally, information about specialised topics to informed audiences; - communicate with peers, senior colleagues and specialists on a professional level; - use a range of ICT applications to support and enhance work at this level and adjust features to suit purpose; - interpret, use and evaluate a wide range of numerical and graphical data to set and achieve goals/targets.

Level 11

Knowledge and understanding	Demonstrate and/or work with: - knowledge that covers and integrates most, if not all, of the main areas of the subject/discipline/sector – including their features, boundaries, terminology and conventions; - a critical understanding of the principal theories, concepts and principles; - a critical understanding of a range of specialised theories, concepts and principles; - extensive, detailed and critical knowledge and understanding in one or more specialisms, much of which is at, or informed by, developments at the forefront; - a critical awareness of current issues in a subject/discipline/sector and one or more specialisms.
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: - in using a significant range of the principal professional skills, techniques, practices and/or materials associated with the subject/discipline/sector; - in using a range of specialised skills, techniques, practices and/or materials that are at the forefront of, or informed by forefront developments; - in applying a range of standard and specialised research and/or equivalent instruments and techniques of enquiry; - in planning and executing a significant project of research, investigation or development; - in demonstrating originality and/or creativity, including in practices; - to practise in a wide and often unpredictable variety of professional level contexts.
Generic cognitive skills	- Apply critical analysis, evaluation and synthesis to forefront issues, or issues that are informed by forefront developments in the subject/discipline/sector. - Identify, conceptualise and define new and abstract problems and issues. - Develop original and creative responses to problems and issues. - Critically review, consolidate and extend knowledge, skills, practices and thinking in a subject/discipline/sector. - Deal with complex issues and make informed judgements in situations in the absence of complete or consistent data/information.
Communications, ICT and numeracy skills	Use a wide range of routine skills and a range of advanced and specialised skills as appropriate to a subject/discipline/sector, for example: - communicate, using appropriate methods, to a range of audiences with different levels of knowledge/expertise; - communicate with peers, more senior colleagues and specialists; - use a wide range of ICT applications to support and enhance work at this level and adjust features to suit purpose; - undertake critical evaluations of a wide range of numerical and graphical data.
Autonomy, accountability and working with others	- Exercise substantial autonomy and initiative in professional and equivalent activities. - Take responsibility for own work and/or significant responsibility for the work of others. - Take significant responsibility for a range of resources. - Work in a peer relationship with specialist practitioners. - Demonstrate leadership and/or initiative and make an identifiable contribution to change and development and/or new thinking. - Practise in ways which draw on critical reflection on own and others' roles and responsibilities. - Manage complex ethical and professional issues and make informed judgements on issues not addressed by current professional and/or ethical codes or practices.

Level 12

Knowledge and understanding	Demonstrate and/or work with: - a critical overview of a subject/discipline/sector, including critical understanding of the principal theories, concepts and principles; - a critical, detailed and often leading knowledge and understanding at the forefront of one or more specialisms; - knowledge and understanding that is generated through personal research or equivalent work that makes a significant contribution to the development of the subject/discipline/sector.
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: - in using a significant range of the principal professional skills, techniques, practices and/or materials associated with the subject/discipline/sector; - in using and enhancing a range of complex skills, techniques, practices and/or materials that are at the forefront of one or more specialisms; - in applying a range of standard and specialised research and/or equivalent instruments and techniques of enquiry; - in designing and executing research, investigative or development projects to deal with new problems and issues; - in demonstrating originality and creativity in the development and application of new knowledge, understanding and practices; - to practise in the context of new problems and circumstances.
Generic cognitive skills	- Apply a constant and integrated approach to critical analysis, evaluation and synthesis of new and complex ideas, information and issues. - Identify, conceptualise and offer original and creative insights into new, complex and abstract ideas, information and issues. - Develop original and creative responses to problems and issues. - Deal with complex and/or new issues and make informed judgements in the absence of complete or consistent data/information.
Communications, ICT and numeracy skills	Use a wide range of routine skills and a significant range of advanced and specialised skills as appropriate to a subject/discipline/sector, for example: - communicate at an appropriate level to a range of audiences and adapt communication to the context and purpose; - communicate at the standard of published academic work and/or critical dialogue and review with peers and experts in other specialisms/sectors; - use a range of ICT applications to support and enhance work at this level and specify software requirements to enhance work; - critically evaluate numerical and graphical data.
Autonomy, accountability and working with others	- Demonstrate substantial authority and exercise a high level of autonomy and initiative in professional and equivalent activities. - Take full responsibility for own work and/or significant responsibility for the work of others. - Take significant responsibility for a range of resources. - Demonstrate leadership and/or originality in tackling and resolving problems and issues. - Practise in ways which are reflective, self-critical and based on research/evidence. - Manage complex ethical and professional issues and make informed judgements on new and emerging issues not addressed by current professional and/or ethical codes or practices.

Source: (SCQF, 2015)

TABLE 106 EQAVET INDICATORS UNITED KINGDOM

The table summarises the situation with regard to the ten indicators created by CQAF in the UK. Due to the devolved status of education and the multitude of organizations involved in the quality assurance process in the four countries, the organizations column has not been filled. There are currently some important new policies regarding quality assurance as described above and further investigation will be necessary with various stakeholder organizations to clarify the exact status of the implementation of the indicators in each country. The column "organizations" points out the name of the entity or entities that are monitoring the indicator. The "Observations" column is used when more description is required

#	Indicators	Organization(s)	Observations
1	No 1 Relevance of quality assurance systems for VET providers: (a) share of VET providers applying internal quality assurance systems defined by law/at own initiative (b) share of accredited VET providers		At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is required by law. At that point it was stated that is only used for IVET. Since provision of VET in the four countries differs and is presently undergoing significant changes as described previously, it would be important to clarify the exact situation in each nation with regard to the use of this indicator for quality assurance. See further observations following this table.
2	No 2 Investment in training of teachers and trainers: (a) share of teachers and trainers participating in further training (b) amount of funds invested		At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this indicator is used. No further information regarding this indicator in the UK was mentioned. Since provision of VET in the four countries differs and is presently undergoing significant changes as described previously, it would be important to clarify the exact situation in each nation with regard to the use of this indicator for quality assurance. [..]

3	No 3 Participation rate in VET programmes: Number of participants in VET programmes, according to the type of programme and the individual criteria	Eurostat	Whilst data are collected at the national level through Eurostat, since provision of VET in the four countries differs and is presently undergoing significant changes as described previously, it would be important to clarify the exact situation in each nation with regard to the use of this indicator for quality assurance.
4	No 4 Completion rate in VET programmes: Number of persons having successfully completed/abandoned VET programmes, according to the type of programme and the individual criteria	Labour Force Survey And Eurostat	Whilst data are collected at the national level through Labour Force Survey and Eurostat, since provision of VET in the four countries differs and is presently undergoing significant changes as described previously, it would be important to clarify the exact situation in each nation with regard to the use of this indicator for quality assurance.
5	No 5 Placement rate in VET programmes: (a) destination of VET learners at a designated point in time after completion of training, according to the type of programme and the individual criteria (b) share of employed learners at a designated point in time after completion of training, according to the type of programme and the individual criteria		At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is used. Data are collected through surveys and provider reports. Data are available annually. Since provision of VET in the four countries differs and is presently undergoing significant changes as described previously, it would be important to clarify the exact situation in each nation with regard to the use of this indicator for quality assurance.

6	No 6 Utilisation of acquired skills at the workplace: (a) information on occupation obtained by individuals after completion of training, according to type of training and individual criteria (b) satisfaction rate of individuals and employers with acquired skills/competences		At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is in the planning stage. Data are collected through survey and are available at the national level. Since provision of VET in the four countries differs and is presently undergoing significant changes as described previously, it would be important to clarify the exact situation in each nation with regard to the use of this indicator for quality assurance.
7	No 7 Unemployment rate according to individual criteria	Eurostat	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this is not used. However, data are collected through statistical records and surveys and are available at the national level. Since provision of VET in the four countries differs and is presently undergoing significant changes as described previously, it would be important to clarify the exact situation in each nation with regard to the use of this indicator for quality assurance.
8	No 8 Prevalence of vulnerable groups: (a) percentage of participants in VET classified as disadvantaged groups (in a defined region or catchment area) according to age and gender (b) success rate of disadvantaged groups according to age and gender	Eurostat	No 8 Prevalence of vulnerable groups: (a) percentage of participants in VET classified as disadvantaged groups (in a defined region or catchment area) according to age and gender (b) success rate of disadvantaged groups according to age and gender

9	No 9 Mechanisms to identify training needs in the labour market: (a) information on mechanisms set up to identify changing demands at different levels (b) evidence of their effectiveness	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this indicator is in the planning stage. Data are collected through provider reports and are available at the provider level. Since provision of VET in the four countries differs and is presently undergoing significant changes as described previously, it would be important to clarify the exact situation in each nation with regard to the use of this indicator for quality assurance.
10	No 10 Schemes used to promote better access to VET: (a) information on existing schemes at different levels (b) evidence of their effectiveness	At the Cross Country Analysis on the Use of Indicators for Quality in VET Peer learning visit Helsinki, 13-15 December 2006 it was stated that this indicator is in the planning stage. Data are collected through provider reports. Since provision of VET in the four countries differs and is presently undergoing significant changes as described previously, it would be important to clarify the exact situation in each nation with regard to the use of this indicator for quality assurance.

Note about the indicator # 1 (Relevance of quality assurance systems for VET providers):

Firstly, the differences between the countries in the UK should again be highlighted. In particular, the difference between Scotland and the other three countries, which is greater. Quality measures and controls have been developed for activities in schools. The indicators developed for schools are qualitative and quantitative. For example, each school is required to publish a report on the results of its pupils in all the qualifications taken each year. The DCSF also produces 'league tables' which show national results for each school.

As described in the quality assurance session above, data regarding quality assurance are collected, analysed, and reported. At the moment the precise definitions of these data are not the same in different institutions. Thus, the aim is to make them uniform in the near future. It will also enable a single set of indicators which is better for comparison. Inspection of quality is done by varies organizations mentioned in the quality assurance session above.

An element that is missing for all these indicators is the quality of the training process. The existing indicators allow monitoring and evaluation of the input measures including access and output measures including retention and achievement of qualifications. In order to see the quality of training, two methods are used: learner surveys and inspection by independent inspectors. Inspectors' grades are good reflections of the quality of VET (1).

Note about the indicator # 2 (Investment in training of teachers and trainers):

In the UK, different countries have different emphases on the levels of investment in the training of teachers (2), however it can be generally said that there is an increasing importance given to continuous professional development:

- *England: In 2007, DCSF commissioned a review on implications for teacher training. The overall aim was to remodel the school workforce and develop leadership. Also the Teacher Learning Academy supports and recognises teachers' professional development (3);*
- *Scotland: More continuing professional development opportunities are being created by Learning and Teaching Scotland (4). Lessons are provided so teachers can link themselves better to the world of work;*
- *Wales: a Chartered Teacher programme is available and teachers can be accredited through General Teaching Council for Wales (5);*
- *Northern Ireland: In 2009, following an evaluation of the teacher education programme, the Department for Employment and Learning introduced a new mandatory qualification – the Post Graduate Certificate in Education (Further Education)_- for all new entrant full-time and associate lecturers in the FE sector. A pilot programme is also being introduced to test a 'slimmed down' version of the PGCE(FE) for part-time staff.*

Note about the indicator # 8 (Prevalence of vulnerable groups in the VET system) and # 3 (Participation rate in VET programmes):

In the UK, reducing the number of Not in Education, Employment or Training (NEETs) is a priority for policy. In 2007, the Government conducted a review of apprenticeships as a basis for reforming the law in this area. Thus, by 2013, all school-leavers meeting the criteria established will be entitled to an apprenticeship place. Furthermore, by 2020 the government has committed to delivering 500,000 UK apprenticeships, 400,000 of which will be in England. Data about young people's unemployment rate are collected through Eurostat.

[..]

(1) Indicators for quality in VET To enhance European cooperation Cedefop Panorama series; 134, 2007

(2) http://ec.europa.eu/education/policies/2010/nationalreport_en.html United Kingdom, 2007 National Reports, 2007

(3) http://www.teacherlearningacademy.org.uk/

(4) http://www.ltscotland.org.uk/

(5) http://www.gtcw.org.uk/gtcw/index.php/en

(6) http://www.commonsleader.gov.uk/OutPut/Page2169.asp

Source: (EQAVET Secretariat, 2015 UK b).

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11. RESUMEN EN CASTELLANO

La Tesis, cuyo título en castellano es “La FP en Europa. Monitorizando Erasmus+”, primeramente analiza la formación profesional en Europa desde una perspectiva histórica: ofrece una panorámica que comienza con el Imperio Romano, pasando por la Edad Media, la revolución industrial y llega hasta las acciones específicas propuestas por la Unión Europea.

La Unión Europea fomenta la utilización de los créditos ECVET y ECTS, los marcos supranacionales EQF, EQAVET y Erasmus+ para fomentar la creación de un espacio común de formación profesional.

Seguidamente, pasa a analizar la distribución de los fondos Erasmus+ para FP KA 102 y valora el grado en que esta distribución se está haciendo para valorar si se hace de forma equitativa. Este análisis se realiza mediante nuevas herramientas matemáticas propuestas por el autor que aportan información desde tres perspectivas diferentes: el impacto de los fondos en los estudiantes, en las regiones NUTS1/NUTS2 y en los países a nivel nacional.

Las herramientas matemáticas propuestas en el presente trabajo pueden servir para evaluar la equidad en el resto de acciones clave de Erasmus+, comparando la equidad de la distribución de fondos en los países participantes del programa y a lo largo del tiempo.

Los países analizados en el presente estudio son Francia, Alemania, Italia, España y Reino Unido. Estos 5 países aportan más de la mitad de los estudiantes de formación profesional en la Unión Europea. Además, son los países que más alumnos movilizaron en el programa previo Leonardo da Vinci. Por ello, es posible considerar que las conclusiones obtenidas son

significativas a la hora de analizar el conjunto de la movilidad de la formación profesional en Europa.

11.1 PALABRAS CLAVE:

Educación Comparada, Formación Profesional, Equidad, Erasmus+, EQF, NQF, EQAVET, ECVET, ECTS.

12. ABSTRACT IN ENGLISH

The project “VET in Europe. Monitoring Erasmus+” analyses the vocational education and training in Europe and the Erasmus+ funding procedures. It first describes VET from a historical point of view: it examines the training procedures during the Roman Empire, the Middle Ages, the Industrial Revolution and finishes with the specific actions proposed by the European Union. The European Union uses the following frameworks that foster international compatibility: ECTS and ECVET credits, EQF, EQAVET and Erasmus+.

Secondly, the text analyses the distribution of the Erasmus+ KA102 VET funds and evaluates if this distribution is being done fairly, with equity. This analysis has been done with mathematical tools proposed by the author that provide information from three different perspectives: the impact of the funds on the students, the regions NUTS1/NUTS2 and the nations.

The mathematical tools proposed by the present research can be used to evaluate equity in the rest of Erasmus+ key actions, comparing the equity in the funds’ distribution between the countries participating in the Erasmus+ programme and its evolution over time.

The countries studied in the current research are France, Germany, Italy, Spain and the United Kingdom. These five countries contain more than half of all the vocational education and training students in the European Union. Also, these countries had the most students participating in mobilities during the previous Leonardo da Vinci programme. Hence, it is

possible to consider that the conclusions of the current research offer a significant image of the situation of VET mobilities in Europe.

12.1 KEY WORDS

Comparative Education, Vocational Education and Training, Equity, Erasmus+, EQF, NQF, EQAVET, ECVET, ECTS.